SERVICE MANUAL BG-1L CHASSIS

MODEL	COMMANDER	DEST.	CHASSIS NO.	MODEL	COMMANDER	DEST.	CHASSIS NO.
KV-J25MF1	RM-873	E	SCC-K60EA	KV-J25MH2	RM-873	HK	SCC-K56CA
KV-J25MF1	RM-873	ME	SCC-K57EA	KV-J25MN21	RM-873	GE	SCC-K52CA
KV-J25MF1S	RM-873	GE	SCC-K52FA				
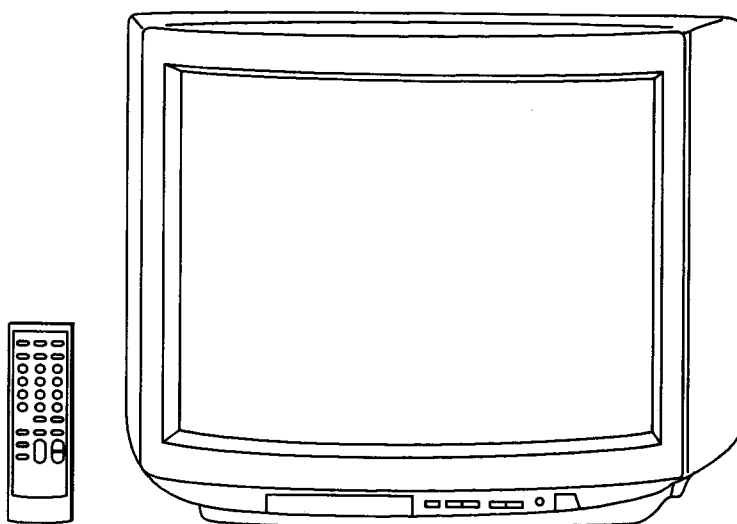
TRINITRON ® COLOR TV
SONY®

SPECIFICATIONS

	KV-J25MF1, KV-J25MF1S, KV-J25MH2, KV-J25MN21	Note
Power requirements	110-240 V AC, 50/60 Hz	
Power consumption (W)	Indicated on the rear of TV	
Television system	B/G, I, D/K, M	
Color system	PAL, PAL 60, SECAM, NTSC4.43, NTSC3.58	
Stereo system	NICAM Stereo B/G, I; A2 Stereo (German) B/G	KV-J25MH2/J25MN21
Teletext language	English, German, Swedish, Italian, French, Spanish	KV-J25MN21
Channel coverage		
B/G	VHF: E2 to E12 / UHF: E21 to E69 / CATV: S01 to S03, S1 to S41	
I	UHF: B21 to B68 / CATV: S01 to S03, S1 to S41	
D/K	VHF: C1 to C12, R1 to R12 / UHF: C13 to C57, R21 to R60 / CATV: Z1 to Z39, S01 to S03, S1 to S41	
M	VHF: A2 to A13 / UHF: A14 to A79 / CATV: A-8 to A-2, A to W+4, W+6 to W+84	
Antenna	75-ohm external terminal for VHF/UHF	
Audio output (speaker)	5W + 5W + 15W(3D WOOFER)	KV-J25MH2/J25MN21
	6W + 6W	KV-J25MF1/J25MF1S
Number of terminal		
Video	Input: 3 Output:1	Phono jacks; 1 Vp-p, 75 ohms
Audio	Input: 3 Output: 1	Phono jacks; 500 mVrms
S-Video	Input: 1	Y : 1 Vp-p, 75 ohms, unbalanced, sync negative C : 0.286 Vp-p, 75 ohms
Headphone	Output: 1	Minijack
3D WOOFER	Output: 1	KV-J25MH2/J25MN21
Picture tube	Super Trinitron (25 in.)	
Tube size (cm)	64	Measured diagonally
Screen size (cm)	60	Measured diagonally
Dimension (w/h/d, mm)	712 × 521 × 520	KV-J25MF1/J25MF1S
	712 × 550 × 520	KV-J25MH2/J25MN21
Mass (kg)	33	KV-J25MF1/J25MF1S
	36	KV-J25MH2/J25MN21
Accessories (Optional)	TV stand (SU-25H)	

Design and specifications are subject to change without notice.

CAUTION

SHORT CIRCUIT THE ANODE OF THE PICTURE TUBE AND THE ANODE CAP TO THE METAL CHASSIS, CRT SHIELD, OR CARBON PAINTED ON THE CRT, AFTER REMOVING THE ANODE.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK △ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

Connections

Connecting the 3D WOOFER

■ *KV-J25MH2/J25MN21 only*

1 Attach the 3D WOOFER into the footholds on the top of the TV.

2 Connect the wires to the 3D WOOFER (8Ω) terminals at the rear of the TV.
The red wire should be connected to the ⊕ red terminal and the black wire to the ⊖ black terminal.
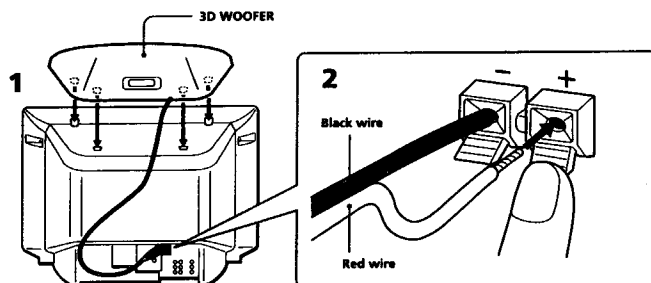
Notes
- Connect only the supplied 3D WOOFER; otherwise the TV may malfunction.
- Unplug the TV from the wall outlet when connecting the 3D WOOFER.
- Make sure that none of the 3D WOOFER wire strands stick out, making contact with the neighbouring speaker terminal, to prevent a malfunction caused by a short circuit of the terminals.

Connecting a VHF antenna or a combination VHF/UHF antenna — 75-ohm coaxial cable (round)

Attach an optional IEC antenna connector to the 75-ohm coaxial cable.
Plug the connector into the ⊤ (antenna) socket at the rear of the TV.
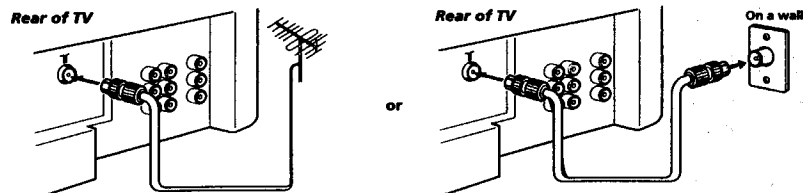
SECTION 1

GENERAL

The operating instructions mentioned here are partial abstracts from the Operating Instructions Manual. The page numbers of the Operating Instruction Manual remain as in this manual.

Connecting optional equipment

You can connect optional audio/video equipment to your TV such as a VCR, multi disc player, camcorder, video game, or stereo system.

Connecting video equipment using video input jacks

VIDEO (yellow)
AUDIO-L (white)
AUDIO-R (red)   ⊿ : Signal flow

⊿ : Signal flow
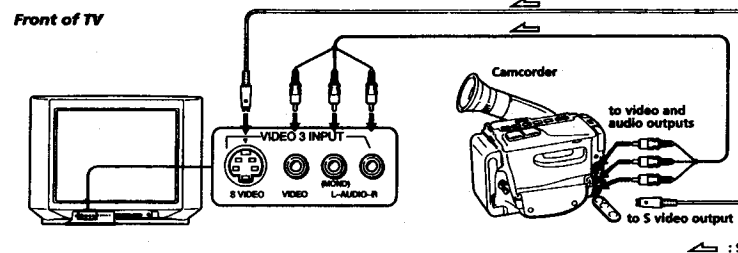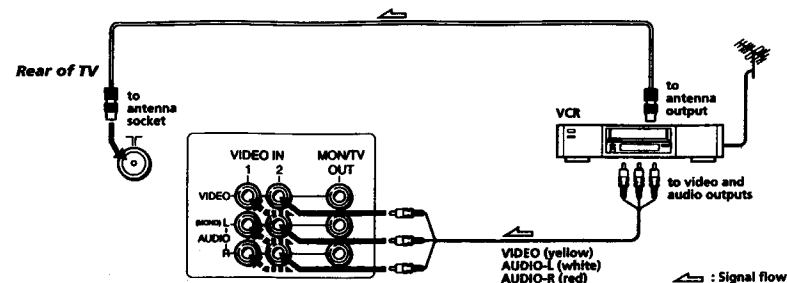
When connecting a monaural VCR
Connect the yellow plug to VIDEO and the black plug to AUDIO-L (MONO).

When connecting a VCR to the ⊤ (antenna) terminal
Preset the signal output from the VCR to the program position 0.
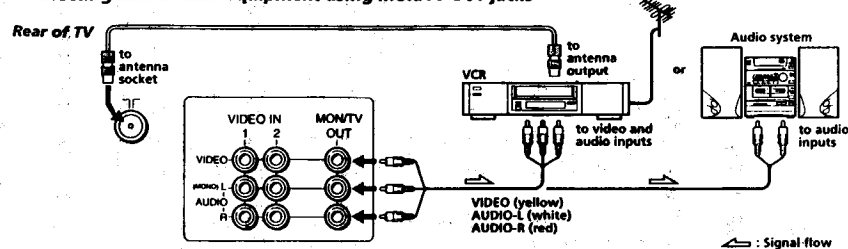
If both S Video and video signals are input simultaneously
The S Video input signal is selected. To view a video input signal, disconnect the S Video connection.
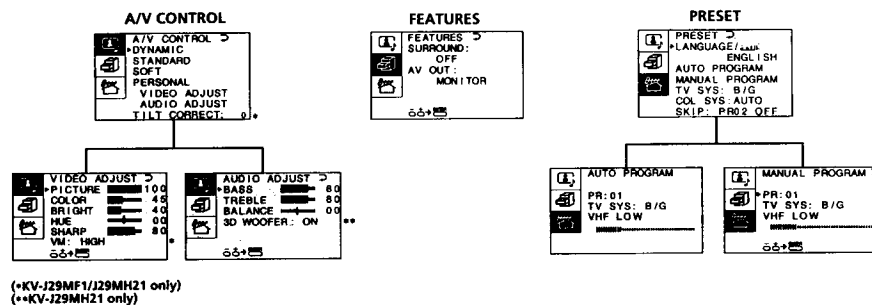
Note on the video input
When no signal is input, the screen becomes blue.

Connecting audio/video equipment using MON/TV OUT jacks

VIDEO (yellow)
AUDIO-L (white)
AUDIO-R (red)

⊿ : Signal flow

Introducing the menus

You can preset TV channels, adjust the picture and sound qualities, and select some settings using the on-screen menus. You can use the buttons on both the remote commander and the TV to operate the menus.

A/V CONTROL

```
A/V CONTROL
▶DYNAMIC
STANDARD
SOFT
PERSONAL
  VIDEO ADJUST
  AUDIO ADJUST
  TILT CORRECT:    0 *
```

```
VIDEO ADJUST
▶PICTURE ▬▬ 100
COLOR   ▬▬ 45
BRIGHT  ▬▬ 40
HUE     ▬  00
SHARP   ▬▬ 00
VM: HIGH ▬▬ 80
ōō+▤
```

```
AUDIO ADJUST
▶BASS   ▬▬ 80
TREBLE  ▬▬ 80
BALANCE ▬▬ 00
3D WOOFER: ON    **
ōō+▤
```

FEATURES

```
FEATURES
SURROUND:
         OFF
AV OUT :
     MONITOR
ōō+▤
```

PRESET

```
PRESET
▶LANGUAGE/اللغة
        ENGLISH
AUTO PROGRAM
MANUAL PROGRAM
TV SYS: B/G
COL SYS: AUTO
SKIP: PR02 OFF
```

```
AUTO PROGRAM
PR:01
TV SYS: B/G
VHF LOW
▬▬▬
```

```
MANUAL PROGRAM
▶PR:01
TV SYS: B/G
VHF LOW
ōō+▤
```

(*KV-J29MF1/J29MH21 only)
(**KV-J29MH21 only)

Getting back to the previous menu (except for AUTO PROGRAM)

Press + or – to move the cursor (▶) to the first line (⊃) of each menu, and press ENTER.

Cancelling the menu screen
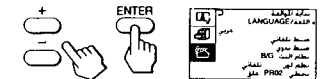
Press MENU.

Notes (except for AUTO PROGRAM)

- When a menu is selected after pressing ENTER, the color of both the menu and the menu symbol change and the cursor (▶) appears beside the first item of the menu.
- When an item on the menu is selected after pressing ENTER, the color of the item changes.
- You can refer to the guide (ōō+▤) at the bottom of the menus (except for the A/V CONTROL and PRESET menus) for the basic operations of the menu.
- If more than approximately 60 seconds elapse after you press a button, the menu screen disappears automatically.

Changing the menu language

If you prefer Arabic to English, you can change the menu language. You can use buttons on the remote commander or the TV.
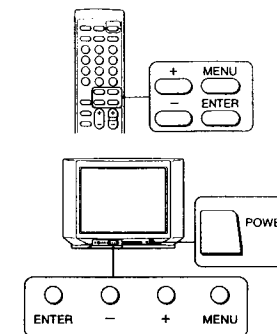
1 Press POWER to turn on the TV.

POWER

2 Press MENU.

MENU

```
A/V CONTROL
DYNAMIC
STANDARD
SOFT
PERSONAL
  VIDEO ADJUST
  AUDIO ADJUST
```

3 Press + or – to move the cursor (▶) to the PRESET menu ( ), and press ENTER.

+ –   ENTER

```
PRESET
▶LANGUAGE/اللغة
        ENGLISH
AUTO PROGRAM
MANUAL PROGRAM
TV SYS: B/G
COL SYS: AUTO
SKIP  PR02 OFF
```

4 Make sure the cursor (▶) appears beside LANGUAGE/اللغة , and press ENTER.
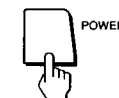
5 Press + or – to select عربي, and press ENTER.

+ –   ENTER

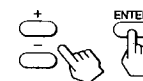All of the menus change to Arabic.

**6** Press MENU to return to the normal screen.
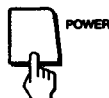
MENU

Presetting channels

You can preset TV channels easily by storing all the receivable channels automatically. You can also preset channels manually or disable program positions (see page 11).
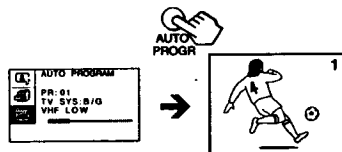
Presetting channels automatically

You can preset up to 100 TV channels in numerical sequence from the program position 1. You can preset channels automatically using the button on the TV or the menu.
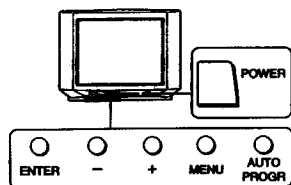
1 Press POWER to turn on the TV.

2 Press AUTO PROGR.

The TV starts scanning and presetting channels automatically. When all of the receivable channels are stored, the first preset TV program appears on the screen.
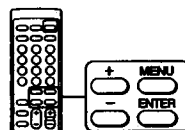
To preset channels automatically using the menu

1 Press MENU.

2 Press + or – to move the cursor (▶) to the PRESET menu (🎬), and press ENTER.

3 Press + or – to move the cursor (▶) to AUTO PROGRAM, and press ENTER.

Presetting channels manually

To change the program position for a channel or to receive a channel with a weak signal which you cannot receive by automatic presetting, preset the channel manually.

1 Press MENU.

2 Press + or – to move the cursor (▶) to the PRESET menu (🎬), and press ENTER.
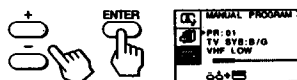

3 Select your local TV system.
(1) Press + or – to move the cursor (▶) to TV SYS, and press ENTER.
(2) Press + or – until your local TV system appears on the menu, and press ENTER.

4 Press + or – to move the cursor (▶) to MANUAL PROGRAM, and press ENTER.

5 Select the program position to which you want to preset a channel.
(1) Make sure the cursor (▶) appears beside PR, and press ENTER.
(2) Press + or – until the program position you want appears on the menu, and press ENTER.

6 Select the desired channel.
(1) Press + or – to move the cursor (▶) to VHF LOW, and press ENTER.
(2) Press + or – until the desired channel picture appears on the TV screen, and press ENTER.

7 Press MENU to return to the normal screen.

If the TV system is not properly selected
The picture color may be poor and/or the sound may be noisy. In this case, select the appropriate TV system.

1 Press PROGR +/– or the number buttons to select the program position.
2 Display the PRESET menu.
3 Press + or – to move the cursor (▶) to TV SYS, and press ENTER.
4 Press + or – until the appropriate TV system appears, and press ENTER.

Notes
• The TV system setting is memorized for each program position.
• If you do not know your local TV system, consult your nearest Sony dealer or authorized service center.

Disabling program positions

By disabling unused or unwanted program positions, you can skip those positions when you press PROGR +/–.

1 Press MENU.

2 Press + or – to move the cursor (▶) to the PRESET menu (🎬), and press ENTER.

3 Press + or – to move the cursor (▶) to SKIP, and press ENTER.

4 Press + or – until the unused or unwanted program position appears on the menu, and press ENTER.

5 Press + or – to select ON, and press ENTER.

6 To disable other program positions, repeat steps 4 and 5.

7 Press MENU to return to the normal screen.
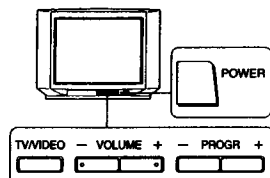
To cancel the skip setting
1 Display the PRESET menu.
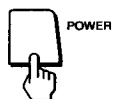2 Press + or – to move the cursor (▶) to SKIP, and press ENTER.
3 Press + or – until the program position you want to cancel the skip setting appears, and press ENTER.
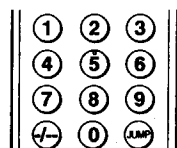4 Press + or – to select OFF, and press ENTER.

Watching the TV

1 Press POWER to turn on the TV.

POWER

When the TV is turned on in the standby mode after pressing POWER on the TV, press POWER on the remote commander.

2 Select the TV program you want to watch.

To select a program position directly
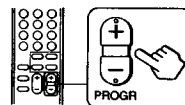Press the number button.

To select a two-digit program position, press "-/--" before the number buttons.
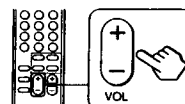For example: to select program position 25, press "-/--," then "2" and "5."

To scan through program positions
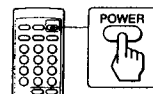Press PROGR +/– on the remote commander or the TV until the program position you want appears.

PROGR

3 Press VOL +/– on the remote commander or VOLUME +/– on the TV to adjust the volume.
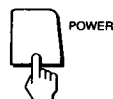
VOL

Turning off the TV

To turn off the TV temporarily
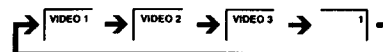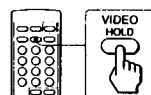Press POWER on the remote commander. The standby indicator lights up.

POWER

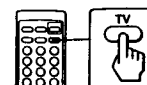**To turn off the TV completely**
Press POWER on the TV.

POWER

Watching the video input

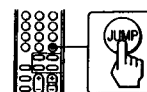**Press VIDEO/HOLD on the remote commander or TV/VIDEO on the TV.**

VIDEO HOLD

VIDEO 1 → VIDEO 2 → VIDEO 3 → TV

To watch TV
Press TV on the remote commander or TV/VIDEO on the TV.

TV

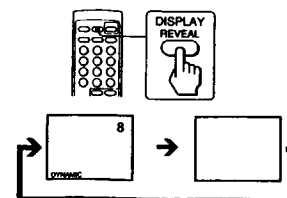## Switching back quickly to the previous channel

Press JUMP.

JUMP

Muting the sound

Press MUTING.

MUTING
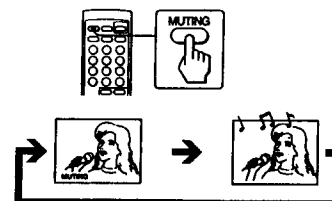
Displaying the on-screen information

Press DISPLAY/REVEAL.

DISPLAY REVEAL

8 →

Note
• The on-screen display shows the program position or the video mode and the picture and sound information. The on-screen display for the picture and sound information disappear after being displayed for approximately three seconds.

Setting the Wake Up Timer

You can set the TV to turn on automatically after the period of time you want.

1 Press WAKE UP/INDEX repeatedly to set the timer.
The on-screen display appears.

WAKE UP INDEX

WAKE UP TIMER:10M
After 10 minutes

WAKE UP TIMER:OFF   WAKE UP TIMER:12HOUR
No Wake Up Timer   After 12 hours
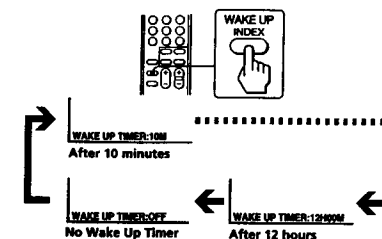
2 If you want a particular TV program or video mode to be displayed using the Wake Up Timer, select the TV program or video mode.

3 Press POWER on the remote commander or set the Sleep Timer to turn off the TV in the standby mode.
The WAKE UP indicator lights up in amber color.

To cancel the Wake Up Timer, press WAKE UP/INDEX repeatedly until "WAKE UP TIMER: OFF" appears, or turn off the main power of the TV.

Notes
• The Wake Up Timer starts immediately after the on-screen display disappears.
• The last TV program position or video mode just before the TV turns into the standby mode will appear when the TV is turned on using the Wake Up Timer.
• If no buttons or controls are pressed for more than two hours after the TV is turned on using the Wake Up Timer, the TV automatically turns into the standby mode. If you want to continue watching the TV, press any button or control on the TV or remote commander.

Setting the Sleep Timer

You can set the TV to turn off automatically after the period of time you want.

Press SLEEP.


```
SLEEP TIMER:30M  →  SLEEP TIMER:60M
After 30 minutes     After 60 minutes

SLEEP TIMER:OFF  ←  SLEEP TIMER:90M
No Sleep Timer       After 90 minutes
```
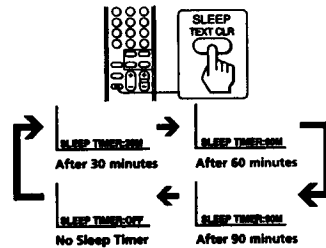
To cancel the Sleep Timer, press SLEEP repeatedly until "SLEEP TIMER: OFF" appears, or turn the TV off.

Adjusting the picture and sound

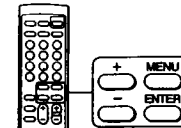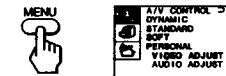## Selecting the picture and sound modes

1 Press MENU.

2 Make sure the cursor (▶) appears in the A/V CONTROL menu (□), and press ENTER.

3 Press + or – to move the cursor (▶) to DYNAMIC, STANDARD, SOFT, or PERSONAL, and press ENTER.

Select	To
DYNAMIC	Receive high contrast picture with powerful sound.
STANDARD	Receive normal contrast picture with medium listening sound.
SOFT	Receive mild picture with soft sound.
PERSONAL	Receive the last picture and sound settings that are adjusted using VIDEO ADJUST and AUDIO ADJUST.

4 Press MENU to return to the normal screen.

Adjusting the picture settings (VIDEO ADJUST)

You can adjust the picture settings to suit your taste with the VIDEO ADJUST option. The adjusted settings are stored in the PERSONAL option.

1 Press MENU.

2 Make sure the cursor (▶) appears in the A/V CONTROL menu (□), and press ENTER.

3 Press + or – to move the cursor (▶) to VIDEO ADJUST, and press ENTER.

4 Press + or – to move the cursor (▶) to the item you want to adjust, and press ENTER.

5 Press + or – to adjust the selected item, and press ENTER.

For details on each item, see "Description of adjustable items" below.

6 To adjust other items, repeat steps 4 and 5.

7 Press MENU to return to the normal screen.

Description of adjustable items

Item	Press –	Press +
PICTURE	Decrease picture contrast.	Increase picture contrast.
COLOR	Decrease color intensity.	Increase color intensity.
BRIGHT	Darken the picture.	Brighten the picture.
HUE	Make picture tones become reddish.	Make picture tones become greenish.
SHARP	Soften the picture.	Sharpen the picture.
VM	Decrease emphasis on picture edges.	Increase emphasis on picture edges.

Notes
* You can adjust VM for the KV-J29MF1 and KV-J29MH21 models only.
* You can adjust HUE for the NTSC color system only.

**If the picture is slightly snowy
(for KV-J29MF1/J29MH21 only)**
You may try to improve the picture by changing the
VM setting as described below:

1 Display the VIDEO ADJUST menu.
2 Press + or – to move the cursor (▶) to VM, and
   press ENTER.
3 Press + or – to select LOW, and press ENTER.

**If the picture color is abnormal when receiving
programs through the ⊤ (antenna) terminal**
Change the color system or the TV system from the
PRESET menu as described below until the color
becomes normal.

1 Display the PRESET menu.
2 Press + or – to move the cursor (▶) to
   COL SYS or TV SYS, and press ENTER.
3 Press + or – to change the color system or the TV
   system until the color becomes normal, and press
   ENTER.

Note
• Normally set the color system (COL SYS) to AUTO.

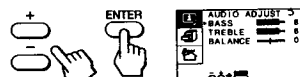## Adjusting the sound settings (AUDIO ADJUST)

You can adjust the sound settings to suit your taste
with the AUDIO ADJUST option. The adjusted settings
are stored in the PERSONAL option.

1 Press MENU.

**2 Make sure the cursor (▶) appears in the A/V
CONTROL menu (⬚), and press ENTER.**

**3 Press + or – to move the cursor (▶) to AUDIO
ADJUST, and press ENTER.**

**4 Press + or – to move the cursor (▶) to the
item you want to adjust, and press ENTER.**

**5 Press + or – to adjust the selected item, and
press ENTER.**

For details on each item, see "Description of adjustable
items" below.

6 To adjust other items, repeat steps 4 and 5.

7 Press MENU to return to the normal screen.

Description of adjustable items

Item	Press –	Press +
BASS	Decrease the bass sound.	Increase the bass sound.
TREBLE	Decrease the treble sound.	Increase the treble sound.
BALANCE	Increase the left speaker's volume	Increase the right speaker's volume.

**If the sound is distorted or noisy when
receiving programs through the ⊤ (antenna)
terminal**
Change the TV system from the PRESET menu as
described below until the sound becomes normal.

1 Display the PRESET menu.
2 Press + or – to move the cursor (▶) to TV SYS, and
   press ENTER.
3 Press + or – to change the TV system until the
   sound becomes normal, and press ENTER.

Listening to the woofer sound (3D WOOFER)

■ *KV-J25MH2/J25MN21 only*

The 3D WOOFER enhances bold, dynamic and clear
sounds that spread over a large area and lets you enjoy
the thrills, horrors, and suspense of movies or music.
The initial setting of the 3D WOOFER is ON, and it is
ready for your listening when you turn on the TV.
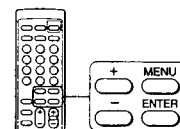
To turn off the woofer sound

1 Press MENU.
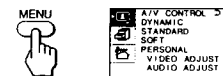
**2 Make sure the cursor (▶) appears in the A/V
CONTROL menu (⬚), and press ENTER.**

**3 Press + or – to move the cursor (▶) to AUDIO
ADJUST, and press ENTER.**
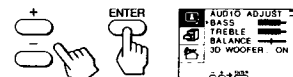
**4 Press + or – to move the cursor (▶) to
3D WOOFER, and press ENTER.**

5 Press + or – to select OFF, and press ENTER.

6 Press MENU to return to the normal screen.

Notes
• To listen to the woofer sound, make sure that the 3D WOOFER
  is properly connected to the TV (see page 6).
• You can also disconnect the 3D WOOFER from the TV to turn
  off the woofer sound.

Listening to the surround sound (SURROUND)

The SURROUND feature enables you to enjoy a surround sound effect that is like being in a large hall or live concert when receiving stereo signals.

1 Press MENU.

2 Press + or – to move the cursor (▶) to the FEATURES menu (⊕) , and press ENTER.

3 Make sure the cursor (▶) appears beside SURROUND, and press ENTER.

4 Press + or – to select HALL(SRS), LIVE(SRS), or SPACE, and press ENTER.

```
  ┌──→ HALL(SRS) ──────→ LIVE(SRS) ─┐
  │                                 │
  └──── OFF ←──────  SPACE ←────────┘
```

For details on each item, see "Description of adjustable items" below.

5 Press MENU to return to the normal screen.

Description of adjustable items

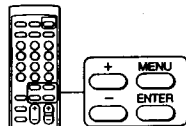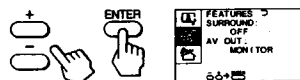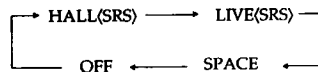| Select	To
HALL(SRS)	Listen to a sound that spreads out over a large area.
LIVE(SRS)	Listen to the sound that gives the feeling of being at a live concert.
SPACE	Listen to a monaural sound that gives a stereo-like effect.
OFF	Turn off the surround sound.

Note
- The (●) ® SRS (SOUND RETRIEVAL SYSTEM) is manufactured by Sony Corporation under license from SRS Labs, Inc. It is covered by U.S. Patent No. 4,748,669. The word "SRS" and the SRS symbol (●) are registered trademarks of SRS Labs, Inc.

Selecting a stereo or bilingual program

■ *KV-J25MH2/J25MN21 only*

You can enjoy stereo sound or bilingual programs of NICAM and A2 (German) stereo systems.

Press A/B/ENLARGE repeatedly until you receive the sound you want.
The on-screen display changes corresponding to the selected sound, and the STANDBY/STEREO/WAKE UP indicator also lights up.
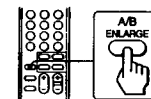
When receiving a NICAM program

Broadcasting	On-screen display (Selected sound)
NICAM stereo	NICAM (Stereo sound) → MONO (Regular sound)
NICAM bilingual	NICAM MAIN (Main sound) → NICAM SUB (Sub sound) → MONO (Regular sound)
NICAM monaural	NICAM MAIN (Main sound) → MONO (Regular sound)
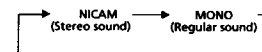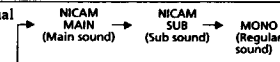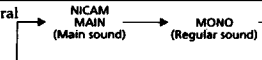
When receiving an A2 (German) program

Broadcasting	On-screen display (Selected sound)
A2 (German) stereo	STEREO (Stereo sound)
A2 (German) bilingual	MAIN (Main sound) → SUB (Sub sound)
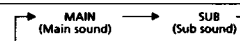
Receiving area for NICAM and A2 (German) programs

System	Receiving area
NICAM	Hong Kong, Singapore, New Zealand, etc.
A2 (German)	Australia, Malaysia, Thailand, etc.

Notes
- If the signal is very weak, the sound becomes monaural automatically.
- If the stereo sound is noisy when receiving a NICAM program, select "MONO." The sound becomes monaural, however, the noise will be reduced.

– 10 –

Viewing Teletext

■ *KV-J25MH2/J25MN21 only*

TV stations broadcast an information service called Teletext via a TV channel.
Teletext service allows you to receive various information such as market shares, weather forecasts or news at any time.

DISPLAY/REVEAL
TEXT
A/B/ENLARGE
WAKE UP/INDEX
SLEEP/TEXT CLR

VIDEO/HOLD
TV
Number
Red
Green
Blue
Yellow
PROGR +/-

SONY

Displaying Teletext

1 Select a TV channel that carries the Teletext broadcast you want to watch.

2 Press TEXT to display the Teletext.
A Teletext page (normally the index page) is displayed. If there is no Teletext broadcast, "100" is displayed at the top left corner of the screen.

To turn off Teletext
Press TV.

Superimposing a Teletext page on the TV picture

Press TEXT.
Each time you press TEXT, the screen changes as follows:

┌→ Teletext → Teletext and TV → TV ┐
└──────────────────────────────────┘

Checking the contents of a Teletext service (INDEX)

Press WAKE UP/INDEX to display an overview of the Teletext contents and page numbers.

Using FASTEXT

This feature allows you to quickly access a Teletext page that uses FASTEXT. When a FASTEXT program is broadcasted, the colored menus appear at the bottom of the screen. The colors of the menus correspond to the red (+), green (MENU), yellow (–), and blue (ENTER) color-coded buttons on the remote commander.
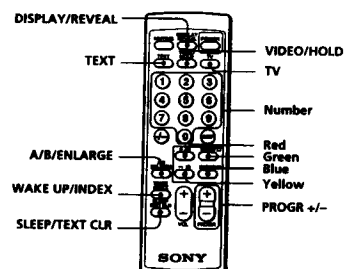
To access a FASTEXT menu
Press the color-coded button on the remote commander that corresponds to the colored menu which appears at the bottom of the screen.
The menu page appears on the screen after several seconds.

Selecting a Teletext page

Press the number buttons to enter the three-digit page number of the Teletext page you want.
If you make a mistake, re-enter the correct page number.

To access the next or previous page
Press PROGR +/–.

You can also access a Teletext page of any page numbers that appear in the colored column at the bottom of the screen using the corresponding color-coded button on the remote commander.

Holding a Teletext page (HOLD)

A Teletext page may consist of several subpages. You can stop the page scrolling in order to read the text at your own pace.

Press VIDEO/HOLD.
The HOLD symbol "⊕" appears at the top left corner of the screen.

To resume normal Teletext operation
Press VIDEO/HOLD again or TEXT.

Revealing concealed information (REVEAL)

The REVEAL option lets you disclose concealed information, such as an answer to a quiz that you find on some of the Teletext pages.

Press DISPLAY/REVEAL.

To conceal the information
Press DISPLAY/REVEAL again.

Enlarging the Teletext display (ENLARGE)

Press A/B/ENLARGE.
Each time you press A/B/ENLARGE, the Teletext display changes as follows:

┌→ Enlarge upper half → Enlarge lower half ┐
└──────────── Normal size ←────────────────┘
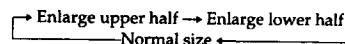
Waiting for a Teletext page while watching a TV program (TEXT CLEAR)

1 Key in the page number of the Teletext that you want to watch, then press SLEEP/ TEXT CLR.

2 When the page number is displayed on the screen, press TEXT to turn on the Teletext.

Customizing the TV

Using the AV OUT (advanced rec-out) terminal

You can select the output signal from the MON/TV OUT jacks at the rear of the TV. However, the signal of the Teletext broadcast cannot be output even though MONITOR is selected (for KV-J29MH21 only).

1 Press MENU.

2 Press + or − to move the cursor (▶) to the FEATURES menu (◢), and press ENTER.

3 Press + or − to move the cursor (▶) to AV OUT, and press ENTER.

4 Press + or − to select the output signal, and press ENTER.

Select	To
TV	Output the signal of the TV broadcast.
MONITOR	Output the signal of the picture you are watching as a main picture.

Note
• Do not change the channel while recording with a VCR through the MON/TV OUT jacks. If you change the channel, it also changes the channel you are recording.

Adjusting the picture tilt

■ *KV-J25MH2/J25MN21 only*

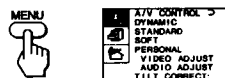You can adjust the picture tilt if it is not aligned to the TV screen. This may happen due to the direction of the earth's magnetic fields in relation to the TV position.

1 Press MENU.

2 Make sure the cursor (▶) appears in the A/V CONTROL menu (▯), and press ENTER.

3 Press + or − to move the cursor (▶) to TILT CORRECT, and press ENTER.

4 Press + or − to select the most suitable value to adjust the picture tilt, and press ENTER.
TILT CORRECT:

$-5 \leftarrow -4 \leftarrow -3 \leftarrow -2 \leftarrow -1 \leftarrow 0 \rightarrow +1 \rightarrow +2 \rightarrow +3 \rightarrow +4 \rightarrow +5$
Press −   Press +

Troubleshooting

If you have any problems, read this manual again and check the countermeasure for each of the symptoms listed below.
If the problem persists after trying the methods below, contact your nearest Sony dealer or authorized service center.

Snowy picture
Noisy sound

➡ Check the antenna.
➡ Check the antenna connection on the TV and on the wall.
➡ Check the TV system (TV SYS) setting.

Dotted lines or stripes

➡ This may be caused by local interference (e.g. cars, neon signs, hair dryers, etc.). Adjust the antenna for minimum interference.

Double images or "ghosts"

➡ This may be caused by reflections from nearby mountains or buildings. A highly directional antenna may improve the picture.

Good picture
Noisy sound
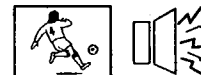
➡ Check the TV system (TV SYS) setting.

No picture
No sound

➡ Press POWER.
➡ Press POWER to turn off the TV for about five seconds and then turn it on again.
➡ Check the power cord connection.
➡ Check the antenna connection.
➡ Check the VCR connections.

Good picture
No sound
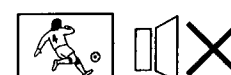
➡ Press VOL +.
➡ Press MUTING.
➡ Press A/B/ENLARGE (KV-J29MH21).

No color

➡ Adjust the COLOR level in the VIDEO ADJUST menu of the PERSONAL option.
➡ Check the color system (COL SYS) setting.

No sound from 3D WOOFER
KV-J25MH2/J25MN21 only

➡ Check the connection of the 3D WOOFER .

TV cabinet creaks
➡ Even if the picture or the sound is normal, changes in the room temperature sometimes make the TV cabinet expand or contract, making a noise. This does not indicate a malfunction.

SECTION 2
DISASSEMBLY

2-1. 3D SPEAKER BOX REMOVAL

① 3D Speaker box
[KV-J25MH2(HK)]
[KV-J25MN21(GE)]

– +

Red wire

Brack wire

2-2. REAR COVER REMOVAL

② Rear cover

①Two screws
(+BVTP4x16)

①Six screws
(+BVTP4x16)

①Two screws
(+BVTP4x16)

2-3. SPEAKER REMOVAL

①Two screws (Washer head)
(+P4 x16)

③Speaker (5cm)
[KV-J25MH2(HK)]
[KV-J25MN21(GE)]

②Bracket (L/R) assy,sp
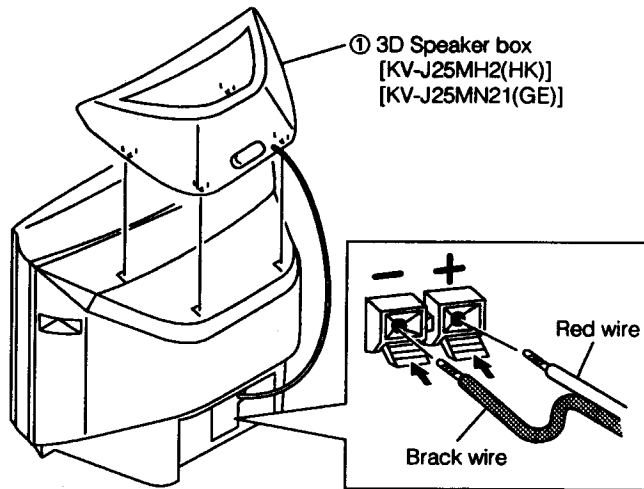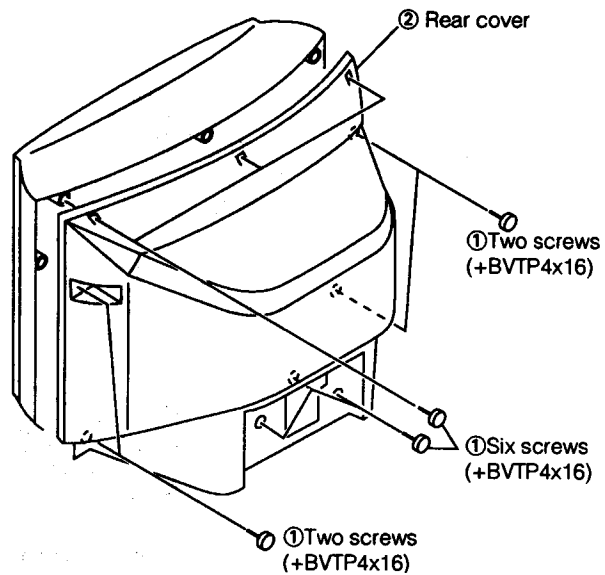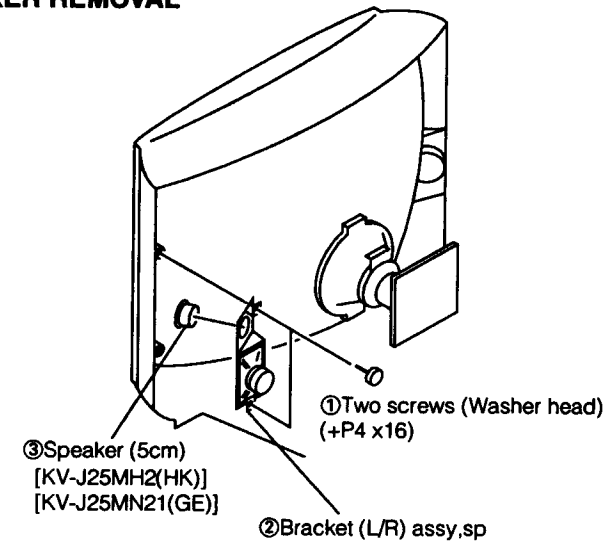
2-4. CHASSIS ASSY REMOVAL

②Chassis assy

①Two claws

2-5. SERVICE POSITION

① PCB holder

② Chassis assy
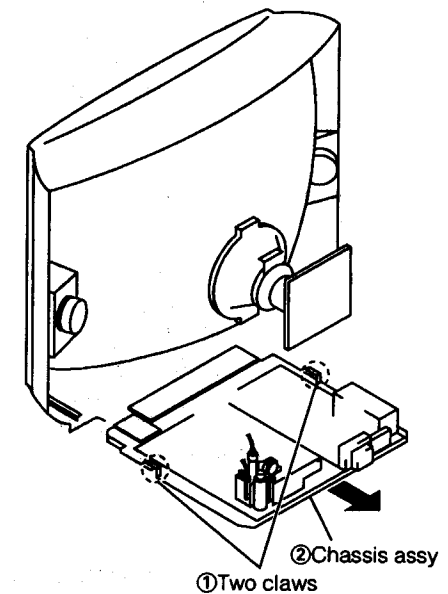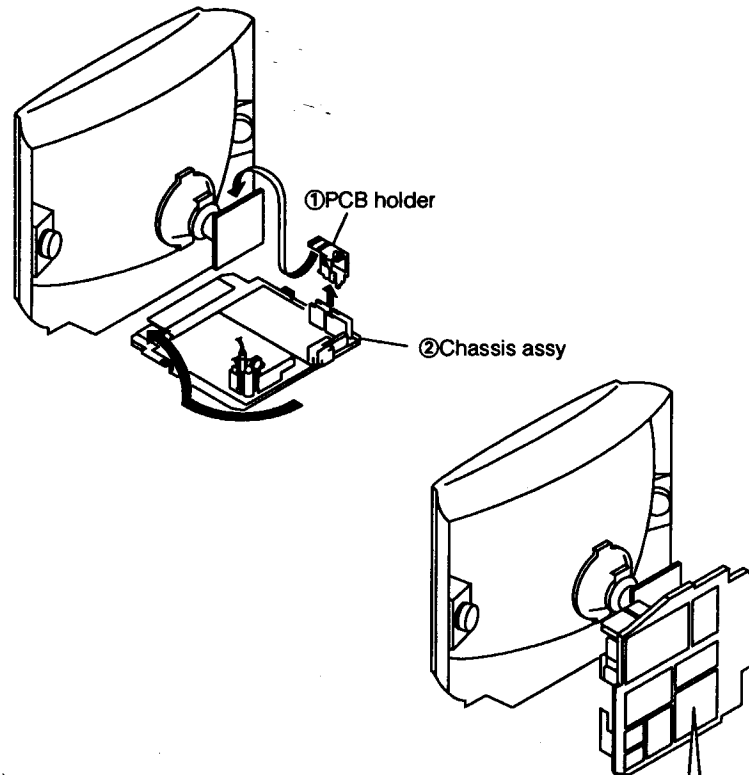
• When measuring the power supply voltage, just remove a part of bracket shon below.

① Cut the four marked sections with a nippers to remove a part of bracket.

ATTENTION

② For safety reason this plate must be remounted after cutting and taking away.

• **SAFTY REQUIREMENT**

1

② Two screws
(+BVTP3 x 8)
(7-685-646-71)
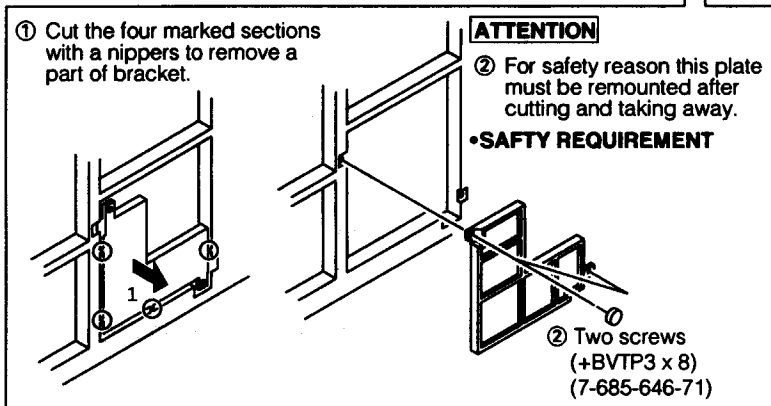
2-6. S AND V1 BOARDS REMOVAL

② PCB holder

① One claw

③ V1 Board
[KV-J25MN21(GE)]

④ S Board

V1 Board

Extention Board
(3-702-716-01)

• Prepare the adove extention board (3-702-716-01) for adjust.

2-7. K BOARD REMOVAL

① Two connector

② K Board
[KV-J25MH2(HK)]
[KV-J25MN21(GE)]

2-8. K1 BOARD REMOVAL

③ K1 Board
[KV-J25MH2(HK)]
[KV-J25MN21(GE)]

① Connector

A3 Board
[KV-J25MH2(HK)]
[KV-J25MN21(GE)]

② Two screws
(+BVTP3 x 12)

2-9. A AND D BOARDS REMOVAL

② Five screws
(+BVTP3 x12)

⑤ Two screws
(+BVTP3 x12)

① Four connector

⑦ D board

④ A Board

③ Three claws

⑥ Four claws

2-10. F1 AND H3 BOARDS REMOVAL

⑤ connector

④ Two Flat cables

⑧ H3 Board

⑥ connector

③ F1 Board

① Two connector

⑦ Two claws

② Two claws

2-11. PICTURE TUBE REMOVAL

⑩ Two DGC band

⑥ C2 Board

⑨ Two DGC holder

④ Deflection yoke

⑪ DGC clip

⑪ DGC clip

⑦ Neck assy

⑫ DGC

⑫ DGC

⑤ Chassis assy

⑧ Deflection yoke

⑬ Tension spring

④ Anode cap

① Two screws
(washer head)
(+BVTP3 x12)

② Speaker
bracket(L)assy

② Five screws
(+BVTP3 x12)

① Two screws
(washer head)
(+BVTP3 x12)

③ Speaker (5cm)
[KV-J25MH2(HK)]
[KV-J25MN21(GE)]

② Five screws
(+BVTP3 x12)

② Speaker
bracket(R)assy

③ Speaker (5cm)
[KV-J25MH2(HK)]
[KV-J25MN21(GE)]

Cushion

⑭ Picture tube

•REMOVAL OF ANODE-CAP

NOTE : Short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT shield or carbon paint on the CRT, after removing the anode.

•REMOVING PROCEDURES
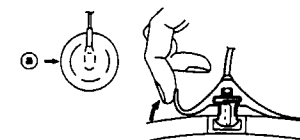
① Turn up one side of the rubber cap in the direction indicated by the arrow ⓐ.
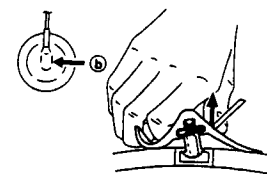
② Using a thumb pull up the rubber cap firmly in the direction indicated by the arrow ⓑ.
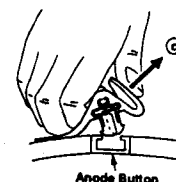
Anode Button

③ When one side of the rubber cap is separated from the anode button, the anode-cap can be removed by turning up the rubber cap and pulling it up in the direction of the arrow ⓒ.

• HOW TO HANDLE AN ANODE-CAP

① Don't hurt the surface of anode-caps with sharp shaped objects!
② Don't press the rubber too hard so as not to hurt inside of anode-caps!
A metal fitting called the shatter-hook terminal is built into the rubber.
③ Don't turn the foot of rubber over too hard!
The shatter-hook terminal will stick out or damage the rubber.
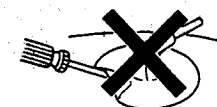
SECTION 3
SET-UP ADJUSTMENTS

- The following adjustments should be made when a complete realignment is required or a new picture tube is installed.
- These adjustments should be performed with rated power supply voltage unless otherwise noted.

Controls and switch should be set as follows unless otherwise noted:

PICTURE control .... RESET
BRIGHTNESS control .... CENTER

Perform the adjustments in order as follows :
1. Beam Landing
2. Convergence
3. Focus
4. White Balance

Note : Test Equipment Required.
1. Color-bar/Pattern Generator
2. Degausser
3. Oscilloscope

Preparations :
- In order to reduce the influence of geomagnetism on the set's picture tube, face it east or west.
- Switch on the set's power and degauss with the degausser.

3-1. BEAM LANDING

1. Input a white signal with the pattern generator.

   $\left.\begin{array}{l}\text{Contrast}\\\text{Brightness}\end{array}\right\}$ normal

2. Position neck ass'y as shown in Fig3-2.
3. Set the pattern generator raster signal to a red raster.
4. Move the deflection yoke to the rear and adjust with the purity control so that the red is at the center and the blue and the green take up equally sized areas on each side.
   (See Figures 3-1 through 3-3.)
5. Move the deflection yoke forward and adjust so that the entire screen is red. (See Figure 3-1.)
6. Switch the raster signal to blue, then to green and verify the condition.
7. When the position of the deflection yoke has been decided, fasten the deflection yoke with the screws and DY spacers.
8. If the beam does not land correctly in all the corners, use a magnet to adjust it.
   (See Figure 3-4.)

Neck assy

Behind the G1 edge

G1   G2   G3   **Fig. 3-2**

Blue
Green
Red

Fig. 3-3

Purity control corrects this area.

Disk magnets or rotatable disk magnets correct these areas (a-b).

Deflection yoke positioning corrects these areas.
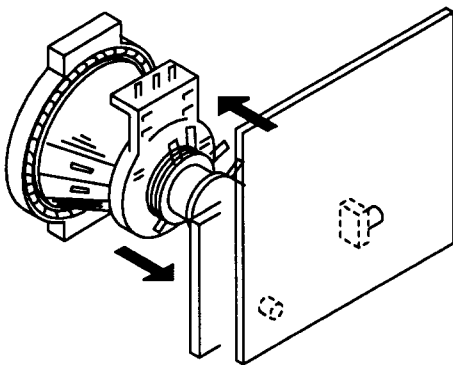
Fig. 3-1
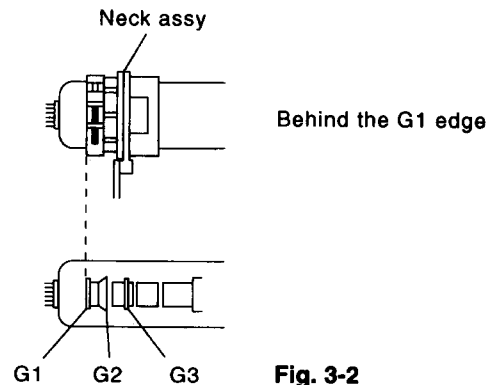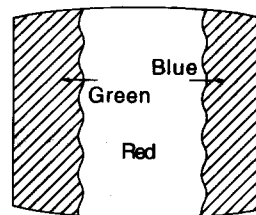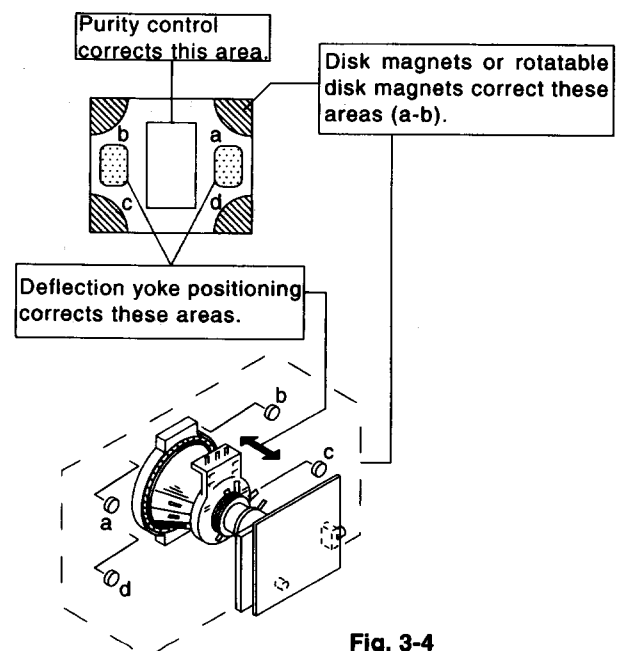
Fig. 3-4

3-2. CONVERGENCE

Preparations :

● Before starting this adjustment, adjust the focus, horizontal size and vertical size.
● Minimize the brightness setting.
● Provide dot pattern.

(1) Horizontal and Vertical Static Convergence

Center dot
R G B
R G B

H. STAT

V. STAT Magnet

RV702
H. STAT

RV701
SCREEN (G2)

C Board
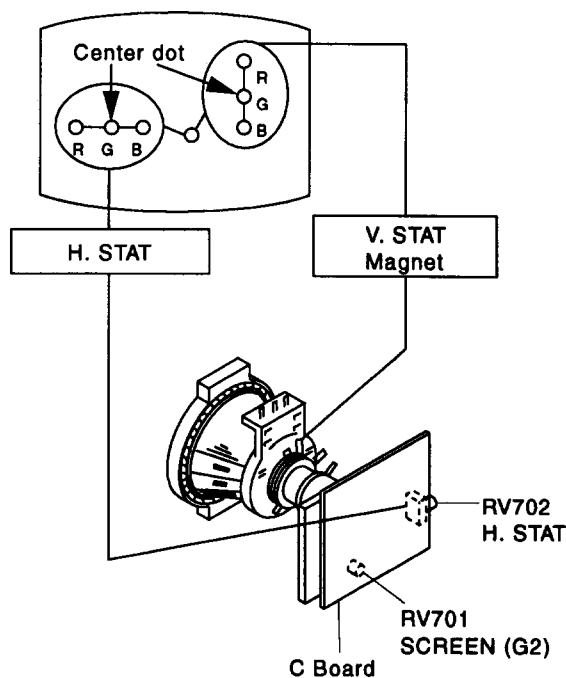
1. (Moving horizontally), adjust the H.STAT control so that the red, green and blue points are on top of each other at the center of the screen.
2. (Moving vertically), adjust the V.STAT magnet so that the red, green and blue points are on top of each other at the center of the screen.
3. If the H.STAT variable resistor cannot bring the red, green and blue points together at the center of the screen, adjust the horizontal convergence with the H.STAT variable resistor and the V.STAT magnet in the manner given below.

   (In this case, the H.STAT variable resistor and the V.STAT magnet influence each other.)

● Tilt the V.STAT magnet and adjust the static convergence by opening or closing the V.STAT magnet.
   If the V.STAT magnet is moved in the direction of the ⓐ and ⓑ arrows, the red, green, and blue points move as shown below.

1

2

3
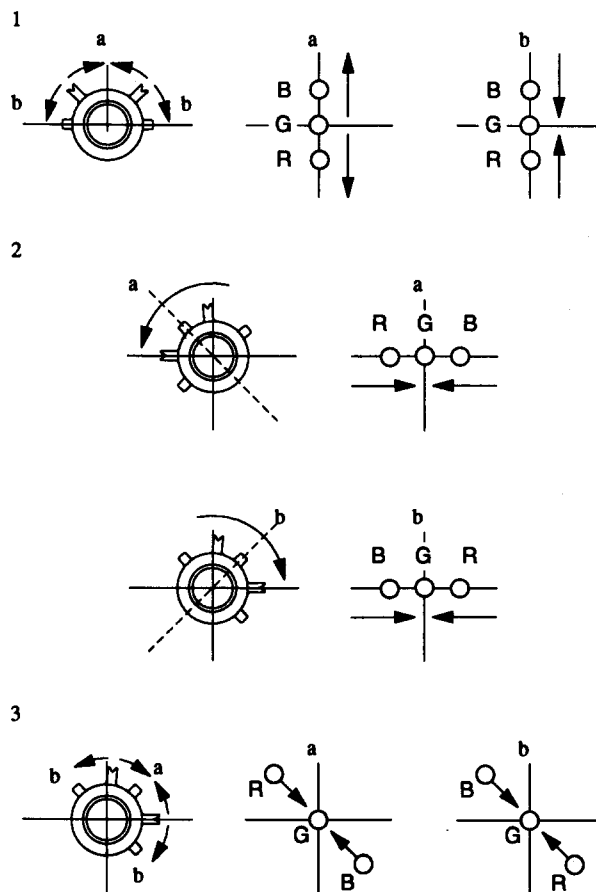
- Operation of BMC (Hexapole) Magnet

  If the red, green and blue dots are not balanced or aligned, then use the BMC magnet to adjust in the manner described below.
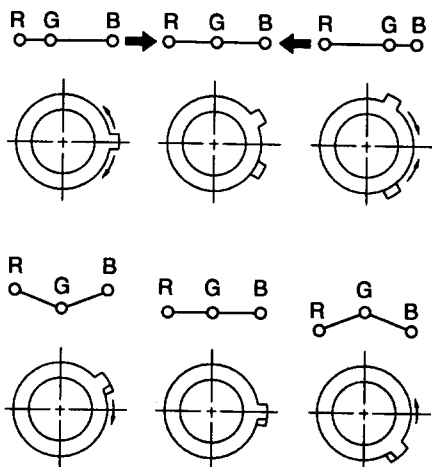
- Use the H.STAT VR to adjust the red, green, and blue dots so that they coincide at the center of screen.

  The respective dot position resulting from moving each magnet interact, so be sure to perform adjustment while tracking.

1 Y separation axis correction magnet adjustment receive the cross-hatch signal and adjust [PICTURE] to [MIN] and [BRIGHTNESS] to [STANDARD] .

2 Adjust the Y separation axis correction magnet on the neck assembly so that the horizontal lines at the top and bottom of the screen are straight.
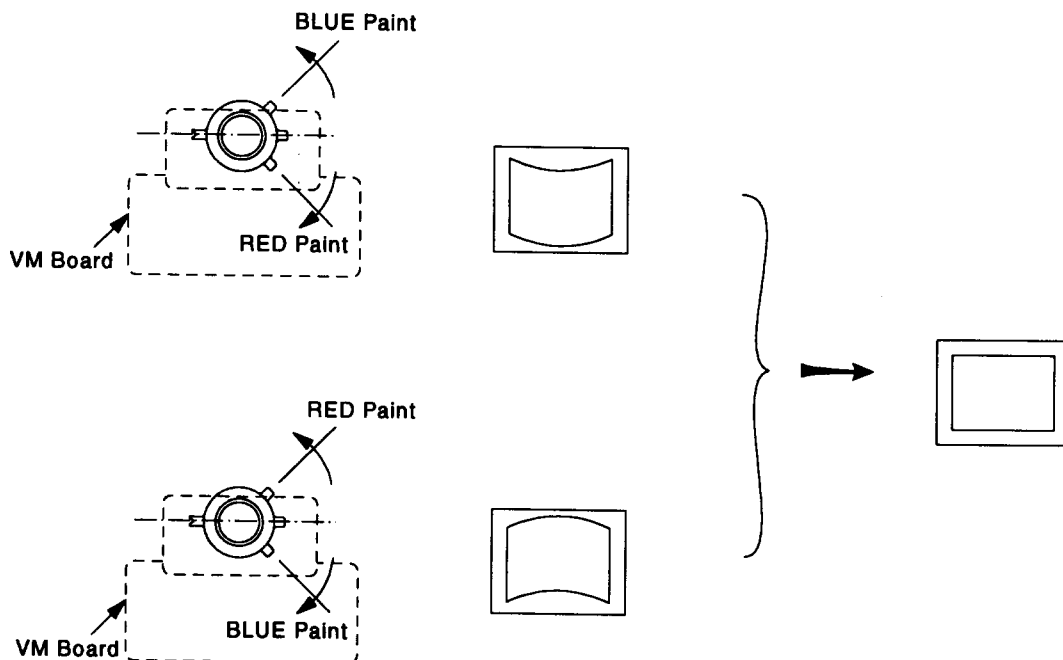
Note 1) The Red and Blue magnets should be equally far from the horizontal center line.

2) Do not seperate the Red and Blue magnets too far.
(Less than 8 mm)

(2) Dynamic Convergence Adjustment

Preparation:

- Before starting this adjustment, adjust the horizontal static convergence and the vertical static convergence
1. Slightly loosen the deflection yoke screws.
2. Remove the deflection yoke spacer.

3. Move the deflection yoke as shown in the figure below and optimize the convergence.
4. Tighten the deflection yoke screws.
5. Install the deflection yoke spacer.
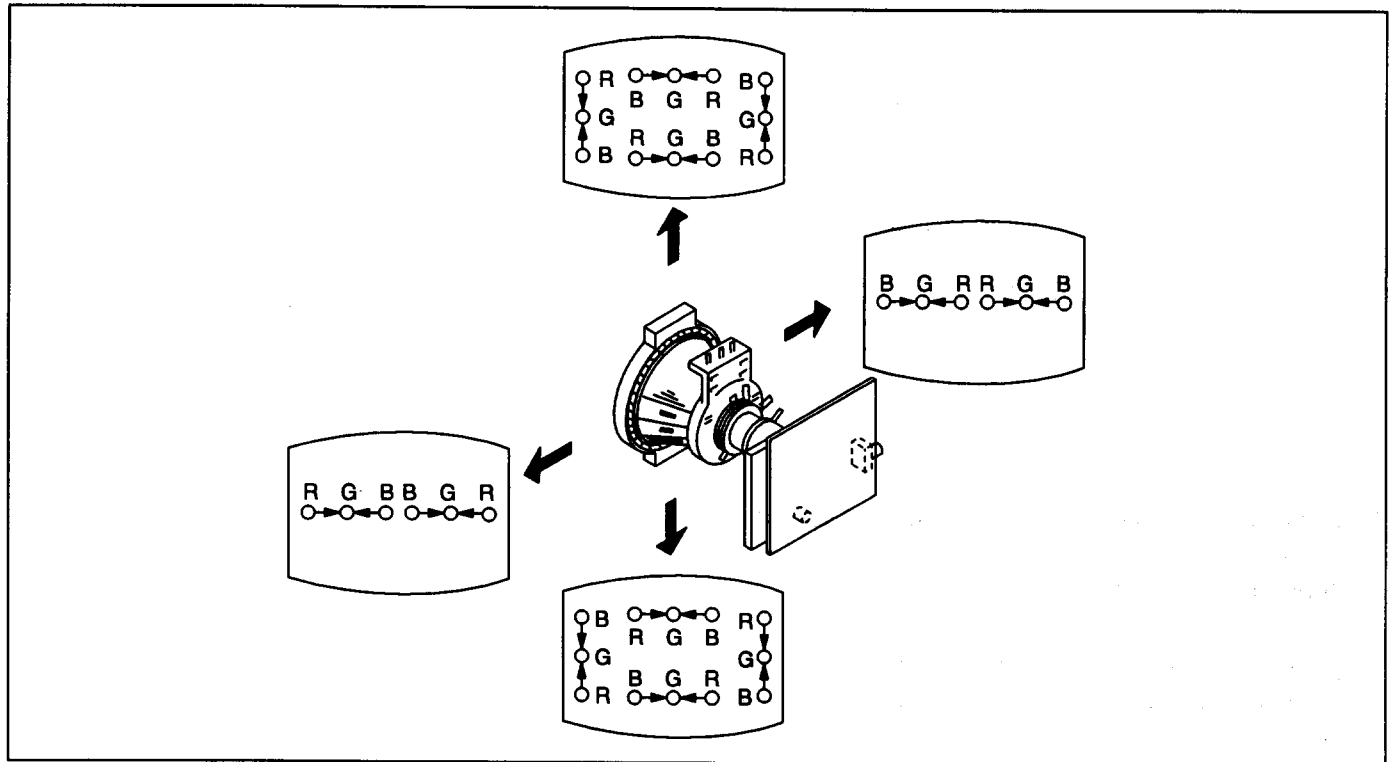
(3) Screen-corner Convergence

a-b:scrren-corner misconvergence

Affix a Permalloy assy corresponding to the misconverged areas.

Permalloy assembly
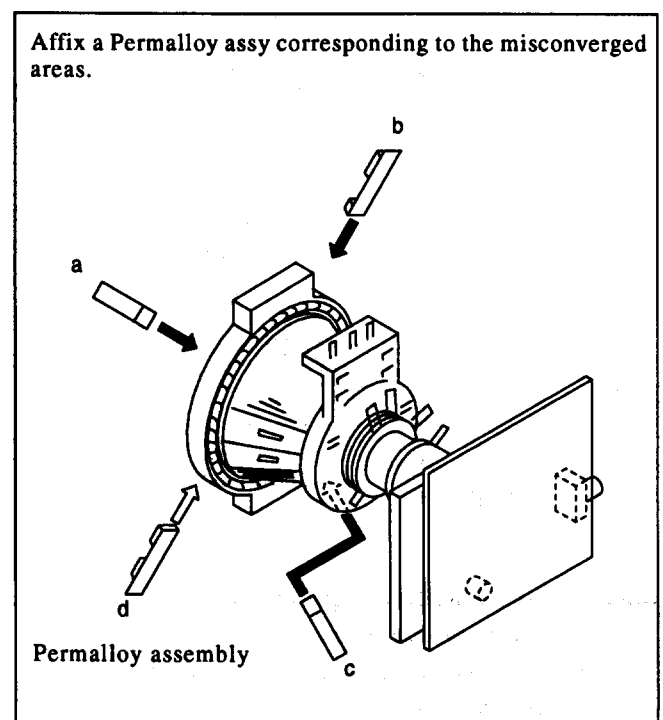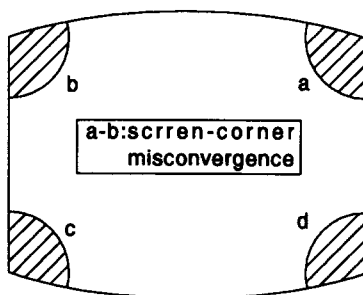
3-3. FOCUS ADJUSTMENT

Adjust FOCUS control on the flyback transformer for the best focus.

Focus

FLYBACK TRANSFORMER (T801)
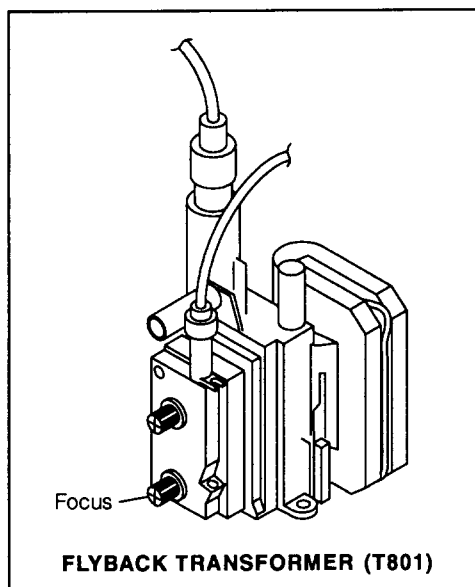
a. AN ITEM OF ADJUSTMENT

Item number	Adjustment item	Standard DATA		Note
		50Hz	60HZ	
35	SBR	17	17	SUB-BRIGHTNESS
37	GDR	2C		G. Drive
38	BDR	2C		B. Drive
39	GCF	07		G. CUT-OFF
3A	BCF	07		B. CUT-OFF

b. METHOD OF CANCELLATION FROM SERVICE MODE

Set the standby condition (Press [POWER] button on the commander), then press [POWER] button again, hereupon it becomes TV mode.

c. METHOD OF WRITE FOR MEMORY

1) Set to Service Mode.
2) Press [1] (UP) and [4] (DOWN), select an item of adjustments.
3) Press [MUTING] button indicate WRITE (RED) on screen.
4) Press [0] button to write into memory.

d. MEMORY WRITE CONFIRMATION METHOD

1) After adjustment, pull out the plug from AC outlet, and then plug into AC outlet again.
2) Turn the power switch ON and set to Service Mode.
3) Call the adjusted items again to confirm adjustments were made.

DATA

```
09   LCP   07        SERVICE
```
Adjustment Item
Item number

```
09   LCP   07        WRITE ◄──── [MUTING]
                                      ↓
                                     [0]
```
Executes the writing
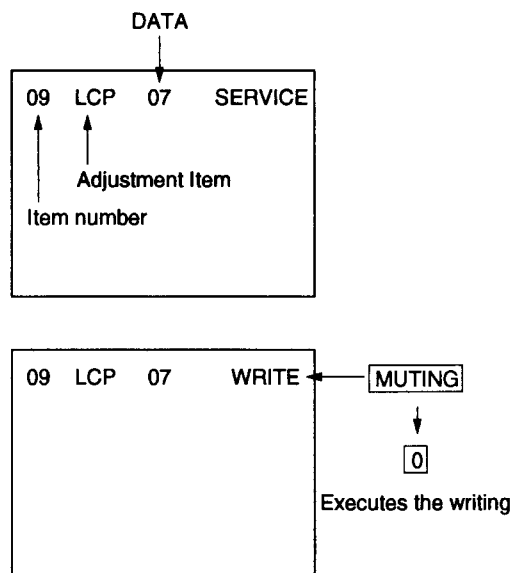
3-4. G2 (SCREEN) AND WHITE BALANCE ADJUSTMENTS

1. G2 (SCREEN) ADJUSTMENT (RV701)

1) Set the PICTURE and BRIGHTNESS to normal.
2) Put to VIDEO input mode without signals.
3) Set to Service Mode.
4) Change BLU data of the item number $\boxed{8C}$ from $\boxed{01}$ to $\boxed{00}$. (To turn off Blue Back.)
5) Press $\boxed{MUTING}$, and $\boxed{0}$ to write the data in the memory.
6) Connect R, G, and B of the C board cathode to the oscilloscope.
7) Adjust G2 (RV701) volume to the value below.

170 V ±2(VDC)

ov
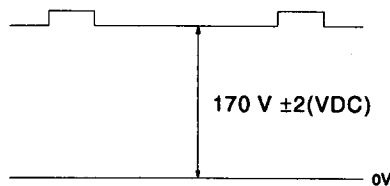
8) Re-set BLU data of the item number $\boxed{8C}$ from $\boxed{00}$ back to $\boxed{01}$.
9) Press $\boxed{MUTING}$, and $\boxed{0}$ to write the data in the memory.

2. WHITE BALANCE ADJUSTMENTS

1) Set to service Mode.
2) Input white raster signal.
3) Set the PICTURE to minimum.
4) Select SBR(35) with $\boxed{1}$ and $\boxed{4}$, and then set the level to minimum with $\boxed{3}$ and $\boxed{6}$.
5) Select GCF(39) and BCF(3A) with $\boxed{1}$ and $\boxed{4}$. And adjust the level with $\boxed{3}$ and $\boxed{6}$ for the best white balance.
6) Set the PICTURE to maximum.
7) Select GDR(37) and BDR (38) with $\boxed{1}$ and $\boxed{4}$, and adjust the level with $\boxed{3}$ and $\boxed{6}$ for the best white balance.
8) Write into the memory by pressing $\boxed{MUTING}$ then $\boxed{0}$.

3. SUB BRIGHT ADJUSTMENT

1) Set to service mode.
2) Input a staircase signal of black and white from the pattern generator.
3) BRIGHTNESS .... RESET.
   PICTURE .... minimum
4) Select SBR(55) with $\boxed{1}$ and $\boxed{4}$, and adjust SBR level with $\boxed{3}$ and $\boxed{6}$ so that the stripe second from the right is dimly lit.

White

second from the right

Black
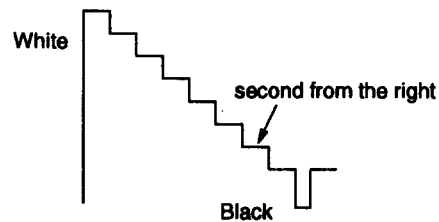
SECTION 4
SELF DIAGNOSIS FUNCTION

If no acknowledgement is returned from a device which is turned "ON", the device has a problem.
In this case, one of the LED's responding to the problem device will flicker a defined number of times.

The flickering frequency responding to each failed device is shown below.

Board name	A Board	A Board	A Board	A Board
Ref. No.	IC003	IC1201	IC104	IC206
Device	NONVOLA-TILE MEMORY	AV SWITCH (CXA1545S)	MAIN Y/C (TDA9145)	SURROUND PROCESSOR (TA8776N)
Flickering Frequency	1	2	3	6

All the devices are checked one after another from the left on the table.
If an error is found, the responding LED will start flickering.
So, if more than 2 devices are failed, the one on the left side will start flickering first.

SECTION 5

CIRCUIT ADJUSTMENTS

5-1. ADJUSTMENTS WITH COMMANDER

Service adjustments are made with the RM-871 that comes with this unit.

```
┌─────────────────────────────────────────────┐
│                                             │
│       Entering service mode                 │
│   With the unit on standby                  │
│              ↓                              │
│         [DISPLAY]                           │
│              ↓                              │
│            [5]                              │
│              ↓                              │
│         [VOL (+)]                           │
│              ↓                              │
│         [POWER]                             │
│   The operation sequence puts the unit into service mode. │
│                                             │
└─────────────────────────────────────────────┘
```
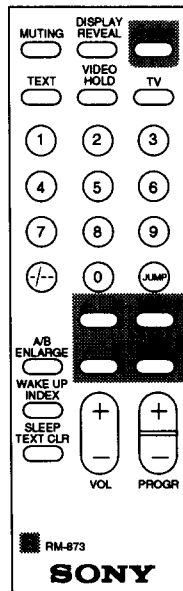
RM-873

[1], [4]	Select the adjustment item.
↓	
[3], [6]	Raise/lower the data value.
↓	
[MUTING]	Writes.
↓	
[0]	Executes the writing.

[7], [0]	All the data becomes the values in memory.
[8], [0]	All user control goes to the standard state.
[5], [0]	Service data initialization (Be sure not to use usually.)
[2], [0]	Write 50Hz adjustment data to 60Hz, or vice versa.

The screen display is :

Adjstment item

Item number   DATA   Mode

```
┌──────────────────────────────┐
│  00   VSH   1F   SERVICE  50 ◄── Depends on the signals
│                                  PAL, SECAM : 50
│  XXX  V2    1C   00 00 00        NTSC      : 60
│       ↑     ↑
│       SOFTWAR VERSION
│
│  OEM CODE
└──────────────────────────────┘
```
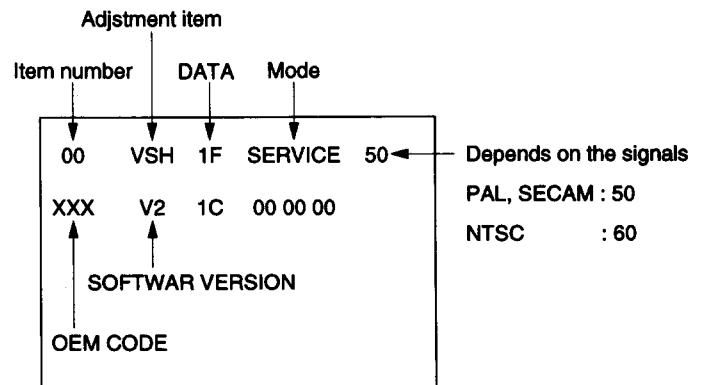
5-2. ADJUSTMENT METHOD

Item Number 00

This explanation uses V-Position as an example.

1. Select 00 VSH with the [1] and [4] buttons.
2. Raise/lower the data with the [3] and [6] buttons.
3. Select the optimum state. (The standard is IF for PAL reception.)
4. Write with the [MUTING] button. (The display changes to WRITE.)
5. Execute the writing with the [0] button. (The WRITE display will be changed back to SERVICE.)

```
┌─────────────────────────────┐
│ 00    VSF   1F    SERVICE 50 ├──── GREEN
│                  ▲           │
│                  │           │
│                  │           │
│                  │           │
│                  │           │
└─────────────────────────────┘
```
Adjusted with [3] and [6] buttons

```
┌─────────────────────────────┐
│ 00    VSF   1F    WRITE 50   ├──── GREEN
│                              │
│                              │
│                              │
│                              │
│                              │
└─────────────────────────────┘
```
Written with [MUTING]

```
┌─────────────────────────────┐
│ 00    VSF   1F    WRITE 50   ├─ GREEN
│                              │  The WRITE display
│                              │  then the display
│                              │  returns to a green
│                              │  SERVICE.
│                              │
└─────────────────────────────┘
```
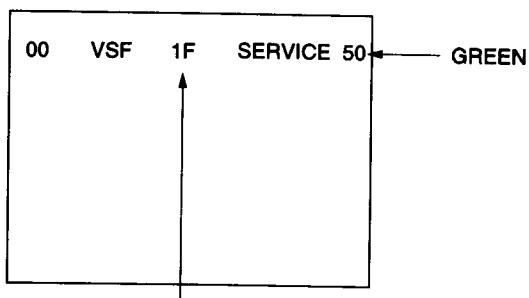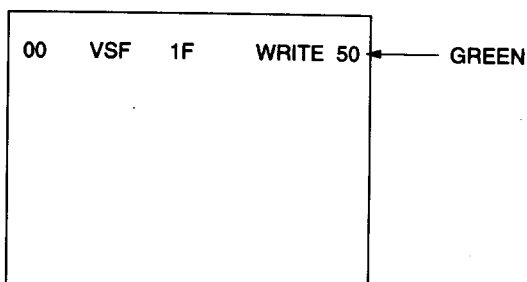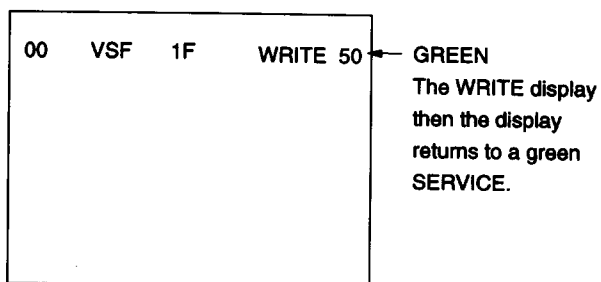Write executed with [0]

Use the same method for Items Number 00-96. Use [1] and [4] to select the adjustment item, use [3] and [6] to adjust, write with [MUTING], then execute the write with [0].

Note : In [WRITE], the data of all items are into memory.

• As for V-FREQ, by searching the bolded screen V range with adjusting data.

Note : For adjustment Items that have differnt standard data between 50Hz or 60Hz and novwel or wid, be sure to use the respective input signal ather adjusting.

Adjustment Item Table

Item number	Adjustment Item	Data range	Standard data	Note	Device
00	VSH	00-3F	1F	V Position	CXA2050S
01	VSZ	00-3F	1F	V Size	(Y/C/J)
02	HSH	00-0F	07	H Position	Slv:88H
03	HSZ	00-3F	1F	H Size	
04	SRC	00-0F	07	S Correction	
05	VLN	00-0F	07	V Linearity	
06	PAP	00-3F	1F	Pin Comp	
07	PPH	00-0F	07	Pin Phase	
08	UCP	00-0F	07	Up Corner Pin	
09	LCP	00-0F	07	Low Corner Pin	
0A	BOW	00-0F	07	AFC-Bow	
0B	ANG	00-0F	07	AFC-Angle	
0C	VAP	00-3F	2B	V Aspect	
0D	VSC	00-3F	1F	V Scroll	
0E	ULN	00-0F	00	UP V Linearity	
0F	LLN	00-0F	00	LOW V Linearity	
10	EHH	00-03	00	EHT-H	
11	EHV	00-03	01	EHT-V	
12	HBS	00-01	01	H Blk Wid. ON/OFF	
13	LBK	00-0F	0F	L Blk Width	
14	RBK	00-0F	0F	R Blk Width	
15	JSW	00-01	00	Jump ON/OFF Sw	
16	VBW	00-03	02	V Blk Wid. Con.	
17	AFC	00-03	01	AFC-Mode	
18	FHH	00-01	00	FH-HI	
19	VFQ	00-03	00	V-Freq	
1A	VOF	00-01	00	V OFF	
1B	VMD	00-01	00	CD-Mode 2	
1C	CMD	00-01	00	CD-Mode	
1D	ITL	00-03	00	Inter lace	
1E	ZSW	00-01	00	ZOOM SW	
1F	POV	00-03	03	Pre-Over	
20	CT1	00-01	01	C-Trap(NTSC)	
21	CT2	00-01	01	C-Trap(PAL)	
22	CF0	00-0F	07	C-Trap f0 Adj	
23	SF0	00-01	01	Sharpness f0 Adi	
24	TOT	00-01	00	TOT Filter SW	
25	CSW	00-03	00	Color SW	
26	XTL	00-03	00	Xtal	
27	CV1	00-01	01	CV/YC Select(NTSC)	
28	CV2	00-01	01	CV/YC Select(PAL)	
29	VM	00-01	01	VM ON/OFF	
2A	YVM	00-01	00	YSI/VM SW(0:YSI)	
2B	DPC	00-01	01	D-Pic ON/OFF	
2C	DCO	00-01	01	Dynamic Color	
2D	GMM	00-03	01	Gamma	
2E	DTR	00-01	01	DC-Tran	
2F	DL1	00-07	03	Delay Ctrl.(PAL)	
30	DL2	00-07	03	Delay Ctrl.(NTSC)	
31	DL3	00-07	03	Delay Ctrl.(SECAM)	
32	SCN	00-0F	09	Sub-Contrast	
33	SCO	00-0F	0B	Sub-Color	
34	SHU	00-0F	05	Sub-Hue	
35	SBR	00-3F	17	Sub-Bright	
36	SSH	00-07	04	Sub-Sharpness	
37	GDR	00-3F	2C	G-Drive	
38	BDR	00-3F	2C	B-Driver	
39	GCF	00-0F	07	G-Cutoff	

Note: ▨ Bold items are fixed data.

Adjustment Item Table

Item number	Adjustment Item	Data range	Standard data	Note	Device
3A	BCF	00-0F	07	B-Cutoff	CXA2050S (Y/C/J) Slv:88H
3B	RPO	00-03	01	Ref-Position	
3C	PON	00-01	01	Pic-ON	
3D	RON	00-01	01	R ON	
3E	GON	00-01	01	G ON	
3F	BON	00-01	01	B ON	
40	AKF	00-01	00	AKB ON/OFF SW	
41	ESY	00-01	00	Ext Sync Select	
42	AGG	00-01	00	Aging Mode ON/OFF	
43	ABL	00-01	01	ABL Pic/Pic&Brt SW(0:Pic only)	
44	LIM	00-01	00	RGB Limit ON/OFF(0:ON)	
45	PB	00-01	01	Picture Booster	TDA9170 (Picture Improve) Slv:D0H
46	BOF	00-01	00	Black Offset	
47	UVG	00-3F	2F	User Var. Gamma	
48	ADG	00-3F	1F	Adaptive Gamma	
49	NLA	00-3F	17	Non-linear Amp	
4A	WDS	00-02	00	Window Select	
4B	LST	00-0F	07	Window Line Start	
4C	LSP	00-0F	07	Window Line Stop	
4D	FST	00-0F	07	Window Field Start	
4E	FSP	00-0F	07	Window Field Stop	
4F	VA	00-01	01	V Aperture on/off	CXA1315 (V-AP) Slv:48H
50	VAW	00-03	02	V Aperture white	
51	VAB	00-03	00	V Aperture black	
52	VAC	00-0F	03	V Aperture core	
53	SHP	00-3F	1F	Sharpness	CXA1315 (LTI) Slv:42H
54	VML	00-3F	37	VM Limitter	
55	COR	00-3F	17	Coreing	
56	DOF	00-3F	15	DSC Offset	
57	DGA	00-3F	1F	DSC Gain	
58	DLT	00-01	01	Delay Time	
59	SDL	00-0F	00	SEL Pin Delay	SDA9189X (PinP) Slv:D6H
5A	POH	00-FF	14	H Position(MSB8bit)	
5B	POV	00-FF	27	V Position	
5C	PMD	00-1F	00	Pinp Display Mode	
5D	WRP	00-0F	00	Write Position	
5E	HDL	00-1F	0B	HSI Delay	
5F	AMS	00-01	00	Decimation Filter	
60	VDL	00-1F	0B	VSI Delay	
61	VSP	00-1F	06	VSP Delay	
62	CON	00-0F	06	Contrast	
63	FRY	00-0F	09	Frame Y	
64	FRV	00-0F	00	Frame V	
65	FRU	00-0F	00	Frame U	
66	INF	00-01	01	Inner Frame	
67	FWV	00-03	02	Frame Width V	
68	FWH	00-07	07	Frame Width H	
69	PLL	00-03	02	PLL Loop Filter	
6A	PDV	00-0F	00	Pedestal V	
6B	PDU	00-0F	00	Pedestal U	
6C	DAT	00-01	00	DAC Stream Control	
6D	DAN	00-01	00	DAC Control	
6E	WIP	00-01	00	Wipe on/off	
6F	WSP	00-03	00	Wipe Speed	

Note: ▓ Bold items are fixed data.

Adjustment Item Table

Item number	Adjustment Item	Data range	Standard data	Note	Device
70	FAW	00-FF	08	NICAM FAW Thresh	MSP3410
71	CTM	00-FF	08	NICAM Error Bit(MONO)	(Audio Stereo
72	CTN	00-FF	50	NICAM Error Bit(NICAM)	Decoder)
73	WCD	00-FF	0A	W.G.Change Data	Slv:80
74	WST	00-FF	15	W.G.STEREO Threshold	
75	WTM	00-FF	50	W.G.Timer	
76	WBT	00-FF	EA	W.G.BILINGUAL Threshold	
77	ACG	00-01	01	AGC AUTO/CONST.	
78	CDB	00-3F	28	AGC GAIN CONST.	
79	FGP	00-7F	24	FM(BG,I,DK)Prescale	
7A	FMP	00-7F	40	FM(M) Prescale	
7B	WGP	00-7F	3C	W.G.Prescale	
7C	NIP	00-7F	7F	NICAM Prescale	
7D	CRM	00-01	00	Carrier Mute	
7E	CML	00-03	00	Corrier Mute Level	
7F	ACO	00-01	01	Audio Clock Out	
80	WAC	00-0F	01	W.G Agreement count	
81	DLY	00-FF	30	Stereo Search Delay	
82	DLG	00-FF	10	W.G. Search Delay	
83	TXP	00-0F	0E	Text Picture cont.	SAA 5281
84	MXP	00-0F	0F	Text Mix mode Pic.	Slv:58H
85	BB1	00-3F	1D	BBE control High	CXA1315
86	BB2	00-3F	1D	BBE control Middle	(BBE)
87	BB3	00-3F	28	BBE control Low	Slv:40
88	ATW	00-03	01	Auto Wide Ident Speed	CXP5068 Slv:54
89	BKP	00-FF	00	Blk off Picture	CXP85340
8A	OSH	00-3F	0A	OSD Position H	(MICRO
8B	ODL	00-FF	00	Power On Delay	CONTROLLER)
8C	BLU	00-01	01	Blue Back on/off	
8D	ROC	00-0F	08	N/S Center Vol.	
8E	ROS	00-07	04	User Step	
8F	DKS	00-01	00	D/K Stereo Search	
90	MUT	00-01	01	No Sync. Mute	
91	DID	00-01	00	Disable Degauss	
92	DWZ	00-01	01	Disable Widezoom	
93	BCS	00-01	00	BASS Center Shift	
94	BVS	00-01	00	Basso Volume Shift	
95	OP0	00-FF	01	Option 0	
96	OP1	00-FF	3E	Option 1	

Note: ▓ Bold items are fixed data.

ITEM INFORMATION
- 50 ··· 50Hz data, 60 ··· 60Hz data
- Standard data listed on the Adjustment Item Table are reference values, therefore if is different for every model.

5-3. PICTURE QUALITY ADJUSTMENTS

Item Number 33-36

|		
33	SCO	Sub-Color
34	SHU	Sub-Hue
35	SBR	Sub-Bright

5-4. A BOARD ADJUSTMENT

SUB CONTRAST ADJUSTMENT (SCN)

1. Receive a PAL color-bar.
2. Set service item 3E GON and 3F BON to data "00". Set the PICTURE 100%, BRIGHT 50% and COLOR MIN.
3. Connect an oscilloscope to the pin ⑥ (R OUT) of CN117, A board.
4. Set to Service Mode and select 32 (SCN) using $\boxed{1}$ and $\boxed{4}$ of the commander to adjust to 2.10 ± 0.05V.
5. Press $\boxed{\text{MUTING}} \rightarrow \boxed{0}$ of the commander to write the data.
6. Receive a NTSC color-bar and adjust 32 (SCN) as step 2~5.
7. Set servce item 3E GON and 3F Bon to data "01".
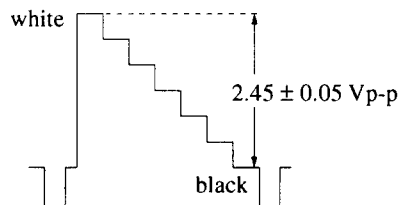
SUB COLOR ADJUSTMENT (SCO)

1. select Video1
2. Input a PAL color-bar, video into video1.
   Set to the following condition:
   PIC 100%, BRT 50%, COL 50%
3. Connect an oscilloscope to the pin ⑤ (B OUT) of CN117, A board.
4. Set to Service Mode and select 33 (SCO) with $\boxed{1}$ and $\boxed{4}$ of the commander to adjust to VB2=VB3=VB4 with $\boxed{3}$ and $\boxed{6}$.
5. Press $\boxed{\text{MUTING}} \rightarrow \boxed{0}$ of the commander to write the data.
6. Adjust 33 (SCO) as step 1~4.

VB2 = VB3 = VB4
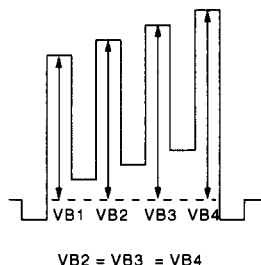
7. $\boxed{\text{Receive}}$ the NTSC color-bar and adjust as step 6.

SUB HUE ADJUSTMENT (SHU)

1. select Video1
2. Input a NTSC color-bar, video into video1.
3. Connect an oscilloscope to the pin ④ (B OUT) of CN117, A board.
4. Select 34 (SHU) with $\boxed{1}$ and $\boxed{4}$ of the commandar by setting to Service Mode and adjust to VB1=VB2=VB3=VB4 with $\boxed{3}$ and $\boxed{6}$.

VB2 = VB3 = VB4
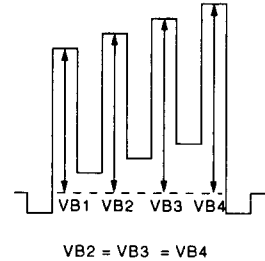
5. Press $\boxed{\text{MUTING}} \rightarrow \boxed{0}$ of the commander to write the data.
6. Set to WIDE Mode by $\boxed{\text{MENU}}$ button to write the same value as in step 3.

5-5. A BOARD ADJUSTMENT AFTER IC003 (MEMORY) REPLACEMENT

When replacing IC003(MEMORY) be sure to change IC001(μ-COM) to the following new IC at the same time.

IC001 (μ-COM)
- **GE, EM, E, HK model**
  CXP85340A-072S to CXP85340A-099S (8-752-880-11)
- **ME (Arabic) model**
  CXP85340A-084S to CXP85340A-098S (8-752-879-23)

1. Enter to Service Mode.

2. Press commander buttons ⑤ and ⓪ (Data Initialize), and ② and ⓪ (Data Copy) to initialize the data.

3. Call each item number, and check if the respective screen shows the normal picture.
   In cases where items are not well adjusted, rectify the items with fine adjustment.
   Write the data per each item number (MUTING +⓪).

4. Select item numbers "95" (OP0) and "96" (OP1) and respectively set the bit per model with command buttons ③ and ⑥.

5. Press commander buttons ⑧ and ⓪ (Test Normal) to return to the data that was set on the shipment from the factory.
   (This will also cancel Service Mode.)

5-6. PICTURE DISTORTION ADJUSTMENT

Item Number 00 – 0B

00   VSH(V POSITION)

01   VSZ(V SIZE)
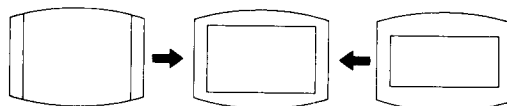
02   HSH(H POSITION)
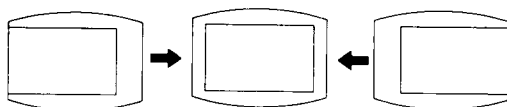
03   HSZ (H SIZE)

04   SCR(VERTICAL Scorrection)

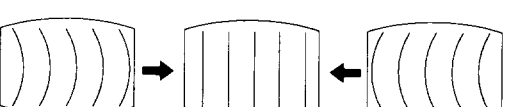05   VLN(V LINEARITY)
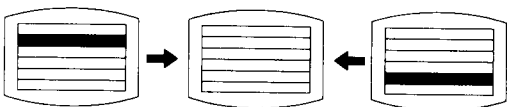
06   PAP (PIN AMP)
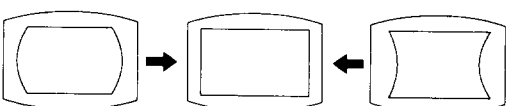
07   PPH(PIN PHASE)

08   UCP(Upper Corner Pin)
09   LCP(Lower Corner Pin)
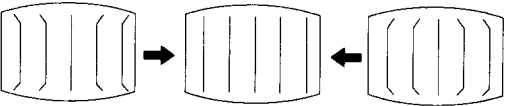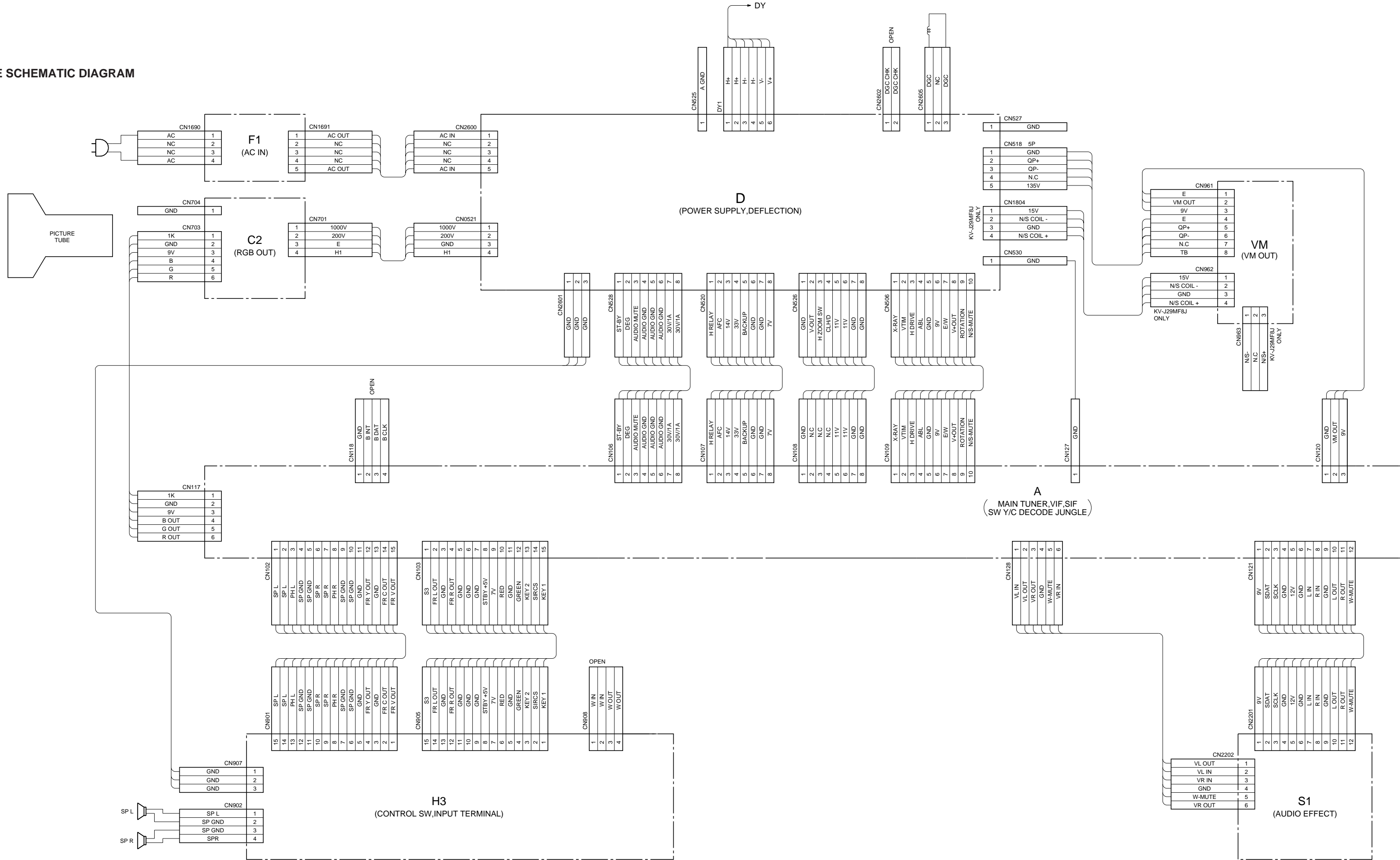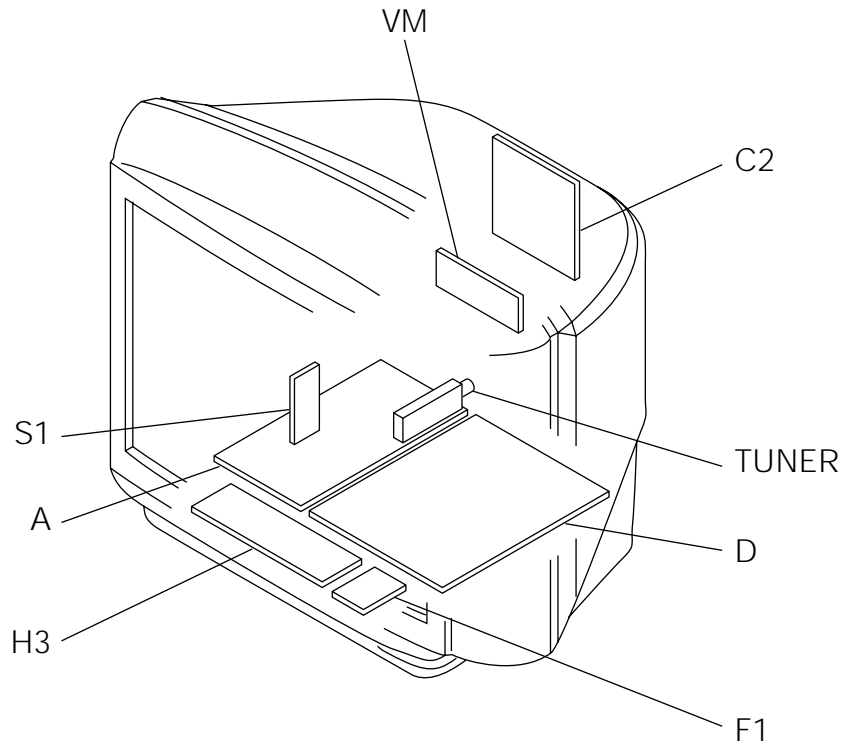
0A   VBOW(AFC.BOW)

0B   VAG(AFC.ANGLE)
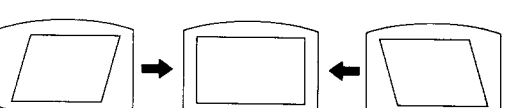
6-2. FRAME SCHEMATIC DIAGRAM

PICTURE TUBE

F1 (AC IN)

C2 (RGB OUT)

D (POWER SUPPLY,DEFLECTION)

VM (VM OUT)

A (MAIN TUNER,VIF,SIF SW Y/C DECODE JUNGLE)

H3 (CONTROL SW,INPUT TERMINAL)

S1 (AUDIO EFFECT)

SP L
SP R

6-2. CIRCUIT BOARDS LOCATION

VM
C2
S1
TUNER
A
D
H3
F1

6-3. SCHEMATIC DIAGRAMS AND PRINTED WIRING BOARDS

Note:
- All capacitors are in µF unless otherwise noted.
- All electrolytic capacitors are rated at 50V unless otherwise noted.
- All resistors are in ohms.
  kΩ = 1000Ω, MΩ = 1000kΩ
- Indication of resistance, which does not have one for rating electrical power, is as follows.
  Pitch: 5 mm
  Rating electrical power 1/4W (CHIP: 1/10W)
- ▭ : nonflammable resistor.
- △ : internal component.
- ▭ : panel designation, or adjustment for repair.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- Readings are taken with a color-bar signal input.
  no mark : PAL
  ( ) : SECAM
  [ ] : NTSC 3.58
  « » : NTSC 4.43
- Readings are taken with a 10 MΩ digital multimeter.
- Voltage are dc with respect to ground unless otherwise noted.
- Voltage variations may be noted due to normal production tolerances.
- All voltages are in V.
- ∗ : Can not be measured.
- Circled numbers are waveform reference.
- ▬ : B + bus.
- ▪▪▪▪ : B − bus.
- ⟹ : signal path.

Reference information
RESISTOR
: RN METAL FILM
: RC SOLID
: FPRD NONFRAMMABLE CARBON
: FUSE NONFLAMMABLE FUSIBLE
: RS NONFLAMMABLE METAL OXIDE
: RB NONFLAMMABLE CEMENT
: RW NONFLAMMABLE WIREWOUND
: ∗ ADJUSTMENT RESISTOR
COIL : LF-8L MICRO INDUCTOR
CAPACITOR : TA TANTALUM
: PS STYROL
: PP POLYPROPYLENE
: PT MYLAR
: MPS METALIZED POLYESTER
: MPP METALIZED POLYPROPYLENE
: ALB BIPOLAR
: ALT HIGH TEMPERATURE
: ALR HIGH RIPPLE

Note:The component identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

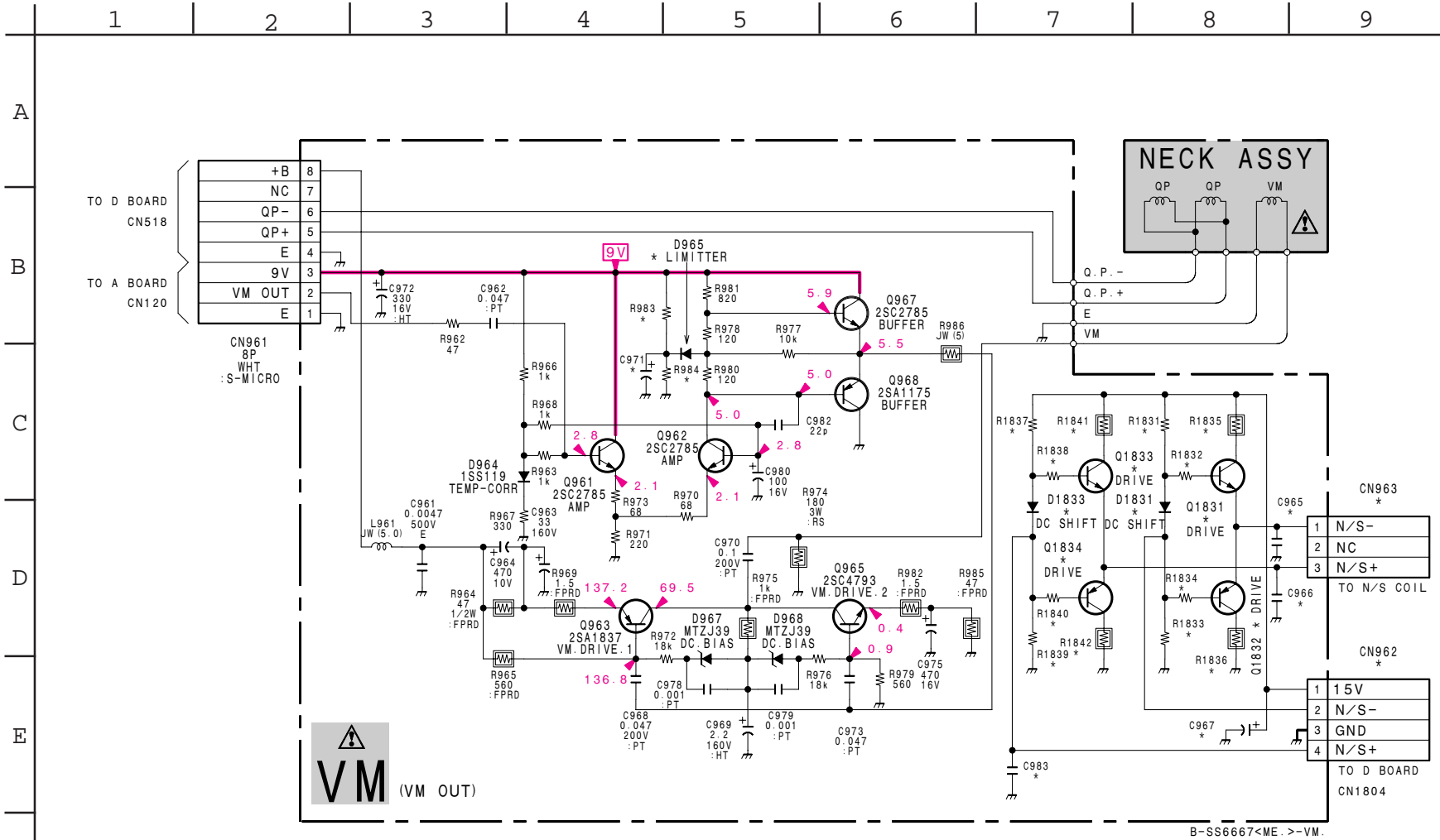## Terminal name of semiconductors in silk screen printed circuit (   )

	Device	Printed symbol	Terminal name	Circuit
①	Transistor		Collector Base Emitter	
②	Transistor		Collector Base Emitter	
③	Diode		Cathode Anode	
④	Diode		Cathode Anode (NC)	
⑤	Diode		Cathode Anode (NC)	
⑥	Diode		Common Anode Cathode	
⑦	Diode		Common Anode Cathode	
⑧	Diode		Common Anode Anode	
⑨	Diode		Common Anode Anode	
⑩	Diode		Common Cathode Cathode	
⑪	Diode		Common Cathode Cathode	
⑫	Transistor (FET)		Drain Source Gate	
⑬	Transistor (FET)		Drain Source Gate	
⑭	Transistor (FET)		Source Drain Gate	
⑮	Transistor			
⑯	Transistor			
⑰	Transistor			
⑱	Transistor			
⑲	Transistor			
⑳	Transistor			
㉑	Transistor			

— : Discrete semiconductor

(Chip semiconductors that are not actually used are included.)

(5) Schematic Diagram of VM Board
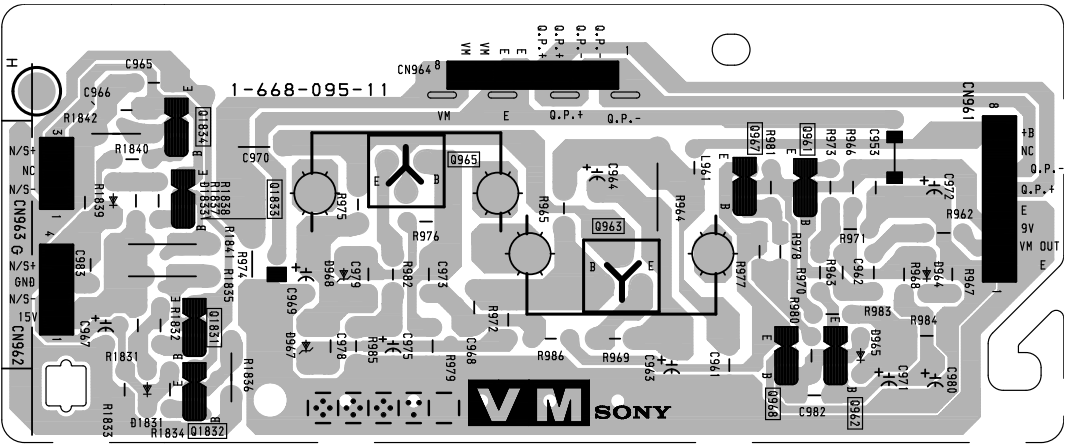
VM BOARD ✳MARK LIST
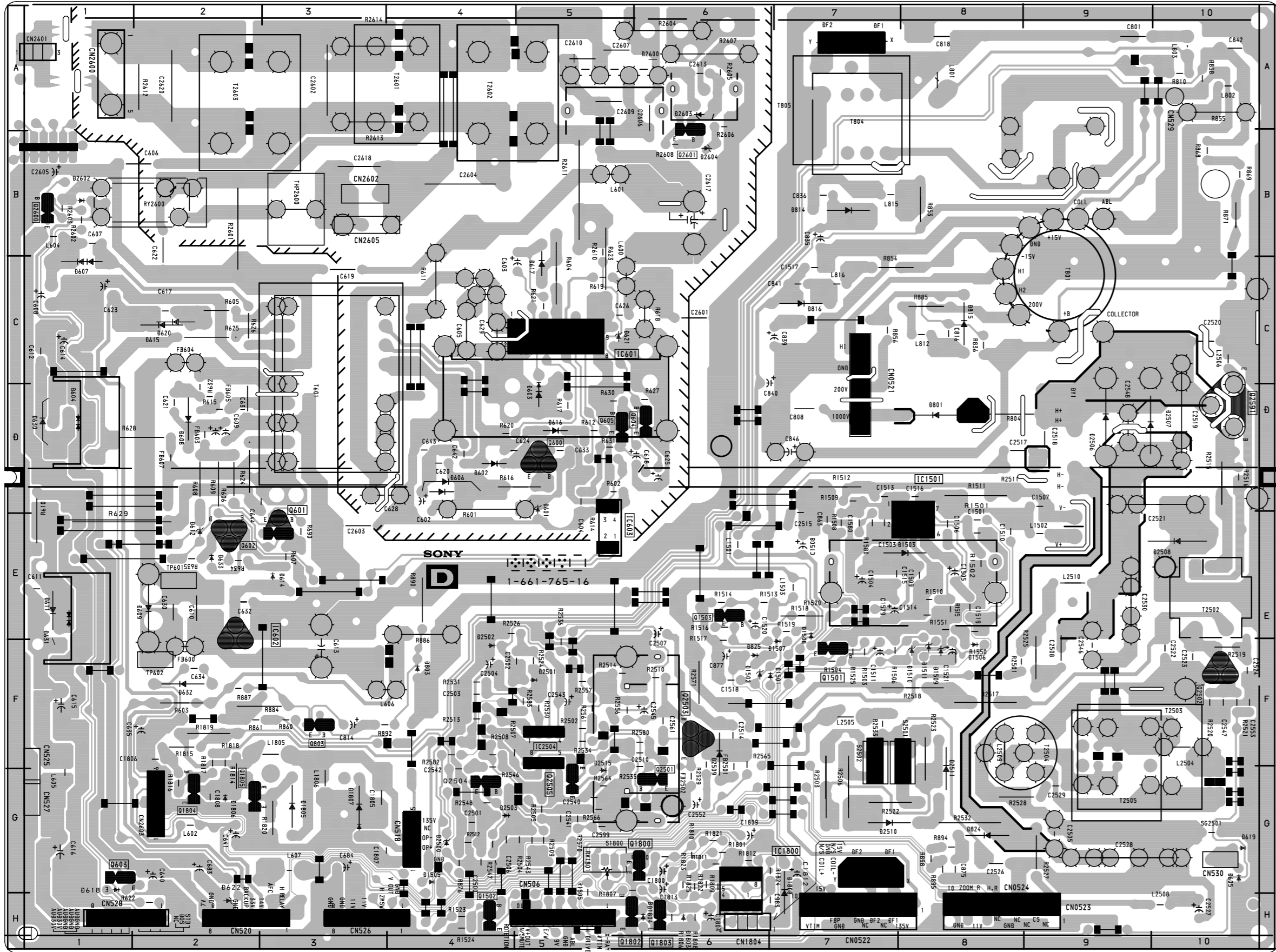
	KV-J25MF8J	KV-J29MF8J
C965	#	0.0022 50V
C966	#	0.0022 50V
C967	#	10 50V
C971	#	1 50V
C983	#	0.082 50V
CN962	#	4P WHT : S-MICRO
CN963	#	3P BLK : S-MICRO
D965	#	1SS119-25TD
D1831	#	1SS119-25TD
D1833	#	1SS119-25TD
Q1831	#	2SD773-T-34
Q1832	#	2SB733-T-34
Q1833	#	2SD773-T-34
Q1834	#	2SB733-T-34
R983	#	56k 1/4W
R984	#	82k 1/4W
R1831	#	1k 1/4W
R1832	#	1k 1/4W
R1833	#	1k 1/4W
R1834	#	1k 1/4W
R1835	#	15 1/2W : FPRD
R1836	#	10 1/4W : FPRD
R1837	#	1k 1/4W
R1838	#	1k 1/4W
R1839	#	1k 1/4W
R1840	#	1k 1/4W
R1841	#	15 1/2W : FPRD
R1842	#	10 1/4W : FPRD

Mark : not mounted

VM [VM OUT]

-VM BOARD-

1-668-095-11

Schematic diagrams

← C2 boards

– D Board –

– F1 Board –

– H3 Board –

D BOARD

IC		D616	D–5
		D617	C–5
IC601	C–5	D618	G–1
IC602	E–3	D619	G–10
IC603	E–5	D621	C–5
IC1501	D–8	D633	E–2
IC1800	G–7	D801	D–8
IC2504	F–5	D803	F–4
		D814	B–7
TRANSISTOR		D815	C–8
		D816	C–7
Q600	D–5	D824	G–8
Q601	E–3	D825	F–6
Q602	E–2	D1501	F–7
Q603	G–1	D1502	F–6
Q803	F–3	D1503	E–8
Q1501	F–7	D1504	E–8
Q1502	H–4	D1505	G–4
Q1800	G–6	D1506	F–8
Q1802	H–5	D1509	F–8
Q1803	H–6	D1510	F–8
Q1804	G–2	D1511	F–8
Q1805	G–2	D1803	H–6
Q2502	F–10	D1804	H–6
Q2503	F–6	D1805	G–3
Q2591	D–10	D1806	G–2
Q2600	B–1	D1808	H–7
Q2601	B–6	D2500	G–4
		D2501	F–5
DIODE		D2502	F–4
		D2506	D–9
D601	D–5	D2507	D–10
D602	D–4	D2508	E–10
D603	D–5	D2510	G–7
D604	D–1	D2511	F–8
D605	G–10	D2515	G–5
D606	D–4	D2600	A–6
D608	D–2	D2602	B–1
D609	E–2	D2603	A–6
D611	E–1	D2604	B–6
D612	E–2	**VARIABLE**	
D614	E–3	**RESISTOR**	
		RV1801	G–5

NOTE:

The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.
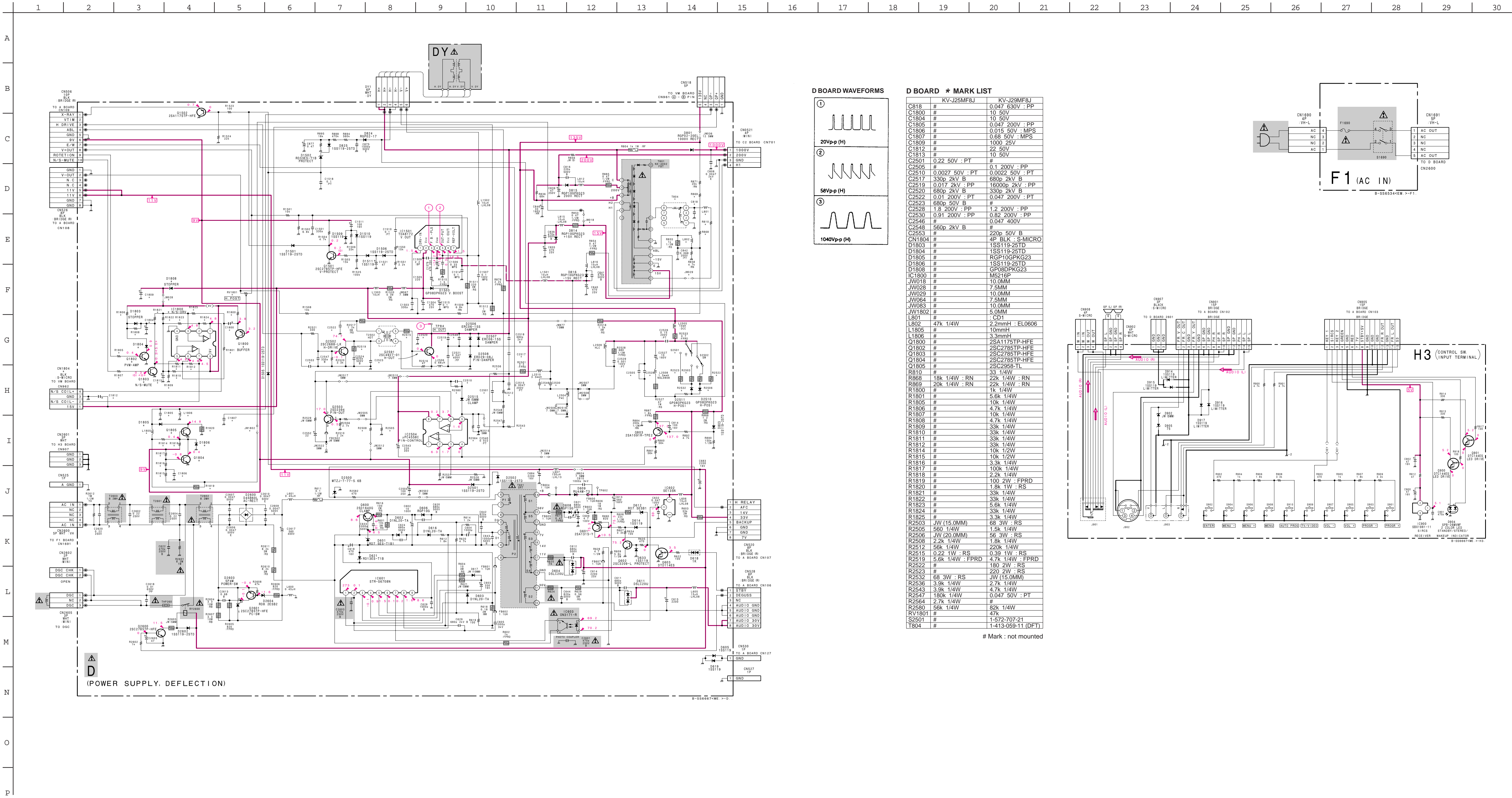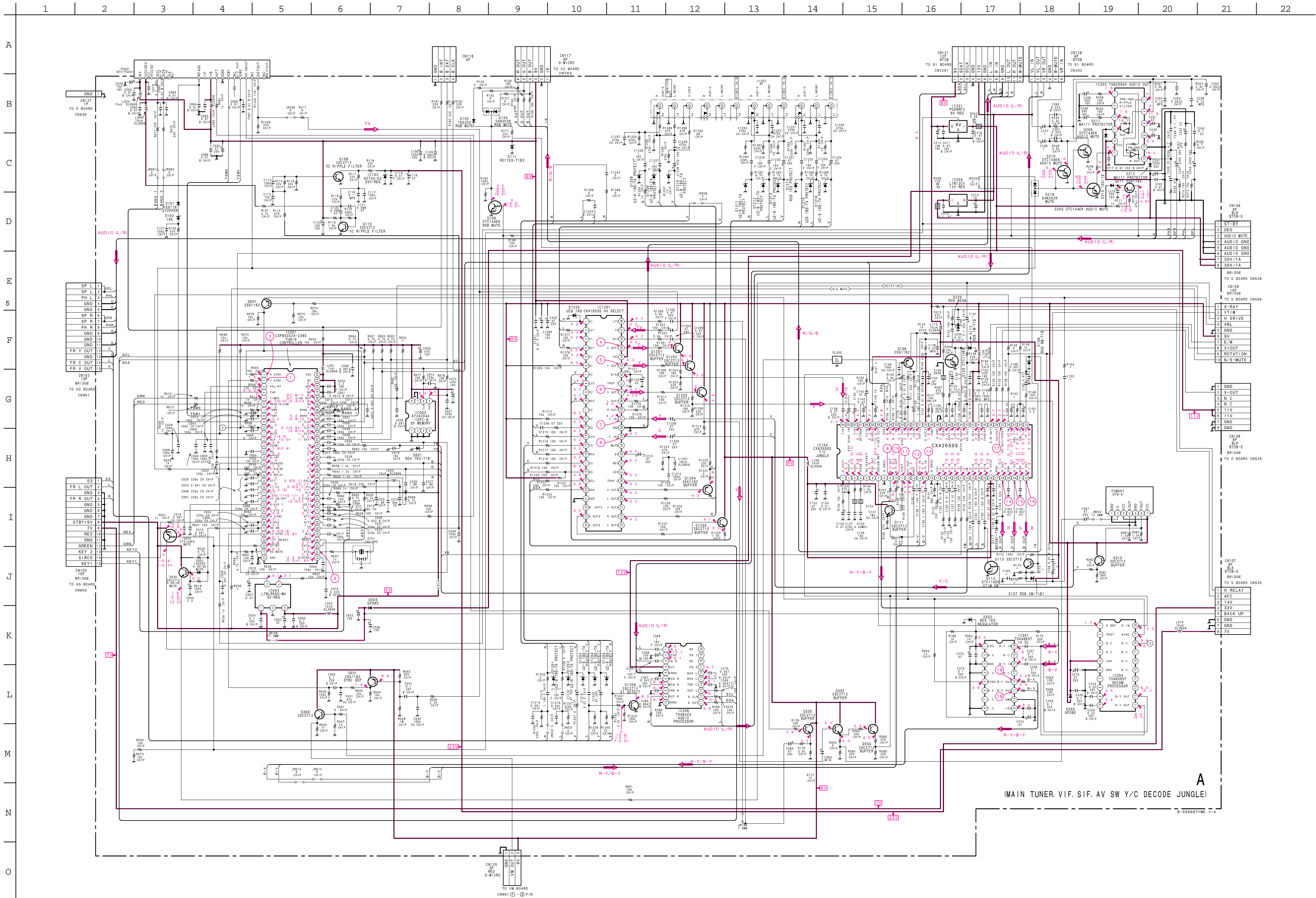
D BOARD WAVEFORMS

① 20Vp-p (H)

② 58Vp-p (H)

③ 1040Vp-p (H)

D BOARD ∗ MARK LIST

	KV-J25MF8J	KV-J29MF8J
C818	#	0.047 630V : PP
C1800	#	10 50V
C1804	#	10 50V
C1805	#	0.047 200V : PP
C1806	#	0.015 50V : MPS
C1807	#	0.68 50V : MPS
C1809	#	1000 25V
C1812	#	22 50V
C1813	#	10 50V
C2501	0.22 50V : PT	#
C2505	#	0.1 200V : PP
C2510	0.0027 50V : PT	0.0022 50V : PT
C2517	330p 2kV B	680p 2kV B
C2519	0.017 2kV : PP	16000p 2kV : PP
C2520	680p 2kV B	330p 2kV B
C2522	0.01 200V : PT	0.047 200V : PT
C2523	680p 50V B	#
C2528	1.8 200V : PP	1.2 200V : PP
C2530	0.91 200V : PP	0.82 200V : PP
C2546	#	0.047 400V
C2548	560p 2kV B	#
C2553	#	220p 50V B
CN1804	4P BLK : S-MICRO	
D1803	1SS119-25TD	
D1804	1SS119-25TD	
D1805	RGP10GPKG23	
D1806	1SS119-25TD	
D1808	GP08DPKG23	
IC1800	M5216P	
JW018	10.0MM	
JW028	7.5MM	
JW029	10.0MM	
JW064	7.5MM	
JW083	10.0MM	
JW1802	5.0MM	
L801	: CD1	
L802	47k 1/4W	2.2mmH : EL0606
L1805	#	10mmH
L1806	#	3.3mmH
Q1800	2SA1175TP-HFE	
Q1802	2SC2785TP-HFE	
Q1803	2SC2785TP-HFE	
Q1804	2SC2785TP-HFE	
Q1805	2SC2958-TL	
R810	33 1/4W	
R868	18k 1/4W : RN	22k 1/4W : RN
R869	20k 1/4W : RN	22k 1/4W : RN
R1800	#	1k 1/4W
R1801	#	5.6k 1/4W
R1805	#	10k 1/4W
R1806	#	4.7k 1/4W
R1807	#	10k 1/4W
R1808	#	4.7k 1/4W
R1809	#	33k 1/4W
R1810	#	33k 1/4W
R1811	#	33k 1/4W
R1812	#	33k 1/4W
R1814	#	10k 1/2W
R1815	#	10k 1/4W
R1816	#	33k 1/4W
R1817	#	100k 1/4W
R1818	#	2.2k 1/4W
R1819	#	100 2W : FPRD
R1820	#	1.8k 1/4W : RS
R1821	#	33k 1/4W
R1822	#	33k 1/4W
R1823	#	5.6k 1/4W
R1824	#	33k 1/4W
R1825	#	3.3k 1/4W
R2503	JW (15.0MM)	68 3W : RS
R2505	560 1/4W	1.5k 1/4W
R2508	JW (20.0MM)	56 3W : RS
R2508	2.2k 1/4W	1.8k 1/4W
R2512	56k 1/4W	220k 1/4W
R2515	0.22 1W : RS	0.39 1W : RS
R2519	5.6k 1/4W : FPRD	4.7k 1/4W : FPRD
R2522	#	180 2W : RS
R2523	#	220 2W : RS
R2532	68 3W : RS	JW (15.0MM)
R2536	3.9k 1/4W	2.7k 1/4W
R2543	3.9k 1/4W	4.7k 1/4W
R2547	180k 1/4W	0.047 50V : PT
R2564	2.7k 1/4W	#
R2580	56k 1/4W	82k 1/4W
RV1801	#	47k
S2501	1-572-707-21	
T804	#	1-413-059-11 (DFT)

Mark : not mounted

D (POWER SUPPLY, DEFLECTION)

F1 (AC IN)

H3 (CONTROL SW, INPUT TERMINAL)

A BOARD *MARK LIST

	KV-J25MF8J	KV-J29MF8J
C103	0.047 50V : CHIP	#
C105	0.056 25V B : CHIP	470p 50V B : CHIP
C1259	100p 50V : CHIP	#
R032	#	4.7k : CHIP
R036	#	4.7k : CHIP
R141	330k : CHIP	#
R152	4.7k : CHIP	#
R164	120k : CHIP	#
R173	22k : CHIP	#
R174	330k : CHIP	220k : CHIP
R175	18k : CHIP	10k : CHIP
R179	820k : CHIP	4.7M : CHIP

Mark : not mounted

A BOARD IC104 CXA2050S

(MAIN TUNER. VIF. SIF. AV SW Y/C DECODE JUNGLE)

A

A BOARD WAVEFORMS

①	②	③	④	⑤ PAL/SECAM
5Vp-p (V)	3.8Vp-p (H)	5Vp-p (H)	0.8Vp-p (H)	1.8Vp-p (H)
⑤ NTSC	⑥ PAL	⑥ SECAM	⑥ NTSC	⑦ PAL/SECAM
1.8Vp-p (H)	1.8Vp-p (H)	1.8Vp-p (H)	1.8Vp-p (H)	1.8Vp-p (H)
⑦ NTSC	⑧	⑨ PAL/SECAM	⑨ NTSC	⑩ PAL/SECAM
1.8Vp-p (H)	0.7Vp-p (H)	0.7Vp-p (H)	0.7Vp-p (H)	0.8Vp-p (H)
⑩ NTSC	⑪ PAL/SECAM	⑪ NTSC	⑫ PAL/SECAM	⑫ NTSC
0.8Vp-p (H)	1.2Vp-p (H)	1.2Vp-p	1.2Vp-p (H)	1.2Vp-p (H)
⑬ PAL/SECAM	⑬ NTSC	⑭ PAL/SECAM	⑭ NTSC	⑮ PAL/SECAM
1.6Vp-p (H)	1.6Vp-p (H)	2.4Vp-p (H)	2.4Vp-p (H)	2.4Vp-p (H)
⑮ NTSC	⑯ PAL/SECAM	⑯ NTSC	⑰	⑱ PAL/SECAM
2.4Vp-p (H)	2.4Vp-p (H)	2.4Vp-p (H)	1.3Vp-p (V)	1.8Vp-p
⑱ NTSC	⑲ PAL/SECAM	⑲ NTSC		
1.8Vp-p	1.4Vp-p (H)	1.4Vp-p (H)		

– A Board –

1-668-092-11

A BOARD

IC		DIODE	
IC001	B–9	D001	C–8 ✳
IC002	C–8	D002	C–10 ③
IC003	C–9	D005	E–8 -
IC102	D–10	D101	A–7 -
IC104	C–5	D102	A–7 -
IC201	D–9	D103	A–3 ③
IC203	D–6	D104	C–7 ⑧
IC205	C–4	D105	C–7 ③
IC206	B–5	D106	B–7 ④
IC351	B–6	D107	C–6 ④
IC354	B–5	D111	B–7 -
IC1201	C–3	D112	D–6 ④
		D117	C–6 ③
TRANSISTOR		D210	E–6 -
		D211	D–6 ③
Q001	A–8 ✳	D212	D–7 ③
Q030	C–10 ①	D218	E–6 ③
Q031	A–7 ①	D220	E–7 -
Q033	A–9 ①	D352	B–6 -
Q105	E–6 ①	D353	B–6 -
Q106	D–6 ①	D1201	C–1 -
Q108	C–7 ①	D1202	C–1 -
Q109	B–10 ①	D1203	C–1 -
Q110	E–1 ①	D1204	C–2 -
Q111	C–6 ①	D1205	C–1 -
Q112	A–7 ①	D1208	B–1 -
Q113	C–6 ①	D1209	B–1 -
Q205	E–6 ①	D1210	B–1 -
Q209	E–6 ①	D1211	C–1 -
Q210	E–8 ①	D1212	C–1 -
Q211	E–8 ①	D1213	C–1 -
Q306	E–5 ①	D1214	C–1 -
Q315	D–2 ①	D1215	D–1 -
Q320	E–3 ①	D1216	D–1 -
Q352	D–3 ①	D1220	C–3 -
Q354	C–3 ①		
Q1201	B–3 ①	**OTHER**	
Q1202	B–3 ①		
Q1203	C–3 ①	DL300	E–4
Q1204	B–2 ①	X101	B–9
Q1205	C–2 ①	X102	C–5
Q1206	C–2 ①	X103	B–5
		X104	D–6

S1 [AUDIO EFFECT]

– S1 Board –

LOGIC	SW0 (2)	SW1 (1)
MODE	B	A
OFF	L	L
SPACE SOUND	L	H
SRS	H	H
NO USE	H	H

( ) =PIN NO OF IC2201

S1

B-SS6667<ME >-S1

C2 [RGB OUT]

C2 BOARD WAVEFORMS

① PAL/SECAM
J25MF1J : 120Vp-p (H)
J29MF1J : 120Vp-p (H)

① NTSC
J25MF1J : 120Vp-p (H)
J29MF1J : 120Vp-p (H)

② PAL/SECAM
J25MF1J : 120Vp-p (H)
J29MF1J : 120Vp-p (H)

② NTSC
J25MF1J : 120Vp-p (H)
J29MF1J : 100Vp-p (H)

③ PAL/SECAM
J25MF1J : 120Vp-p (H)
J29MF1J : 100Vp-p (H)

③ NTSC
J25MF1J : 120Vp-p (H)
J29MF1J : 100Vp-p (H)

④
J25MF1J : 24Vp-p (H)
J29MF1J : 22Vp-p (H)

– C2 Board –

C2 (RGB OUT)

V901 PICTURE TUBE

M68KZT71X (29inch)
M60KWL70X (25inch)

C2 BOARD ✳ MARK LIST

	KV-J25MF8J	KV-J29MF8J
J701	1-251-239-11 SOCKET. CRT	1-526-990-22 SOCKET. CRT
RV702	110M	#

Mark : not mounted

B-SS6667<ME.>-C2.

SONY
1-661-932-11
(1-712-340-11)

– 53 –

– 54 –

6-5. SEMICONDUCTORS

DIODE

D1NL20
RGP10GPKG23
EL1Z
GP08D
RD5.1ES
RGP02-17EL-6433
RGP02-20EL

CATHODE

ANODE

D4SB60L

D5LC20U

MARKING SIDE VIEW

ANODE
CATHODE
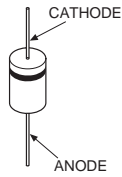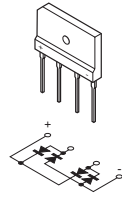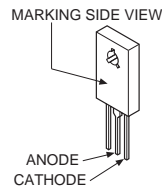
DAN202K
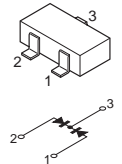
ERC06-15S
RU4AM-T3
S3L20UF4

CATHODE

ANODE

ERD29-08J

CATHODE

ANODE

MA111
1SS355

ANODE

CATHODE

MC932

1
2
3

1 2 3

ON3171R

4

3

1

2
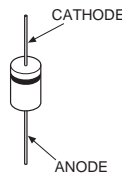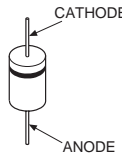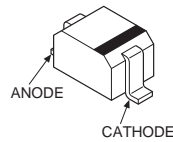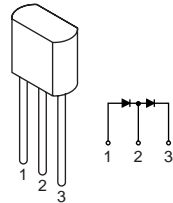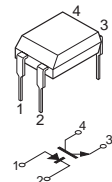
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RD33ES-B2
RD4.7ESB2
RD5.1ES-B2
RD5.6ES-B1
RD7.5ES-B1
RD8.2ES-B2
RD9.1ES-L

CATHODE

ANODE
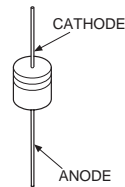
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RD3.6M-B1
MTZJ-T-77-5.6B
RD5.6M-B2
RD6.8M-B3

RD6.8M-B

CATHODE

NC

ANODE

SPB-26MVWF

ANODE
(GRN)
CATHODE

ANODE
(RED)

5P-6M

CATHODE

ANODE   GATE
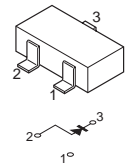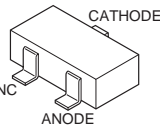
TRANSISTOR

DTA114EK
DTA144EK
DTA144EKA
DTC114EK
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2SC2712-YG-TE85
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B
E
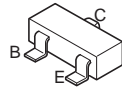
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E C B
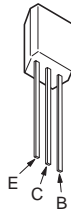
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LETTER SIDE

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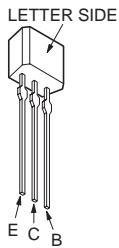
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E C B
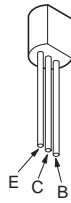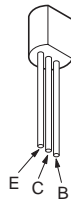
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2SC3601

LETTER SIDE

E C B

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D1 G1
S1 NC
S2
G2 D2

2SD1640Q

LETTER SIDE

E C B
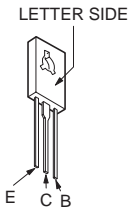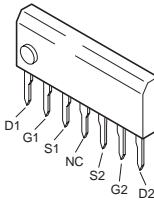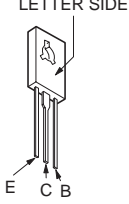
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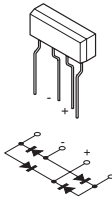
IC

CXA1315M-T4
NJM2178M-T2
NJM4558M-T2
TDA8395T

TOP VIEW

Small Outline L-leaded Package
Pin 8   98
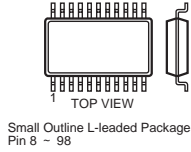
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CXP85332A-206S
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MSP3410B
P83C654
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ST24C04CB1
TDA4665T-T
TDA8424
UPC4558C
UPC574J

TOP VIEW

Dual In-line Package
Pin 6   98
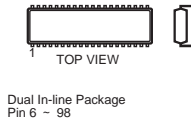
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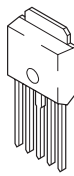
NJM7805FA
PQ09RF2
TA7812S

SBX1981-11

MARKING SIDE VIEW

Single In-line Package
Pin 6   99

SE135N

1 2 3

STR-S6708

n

N
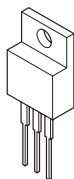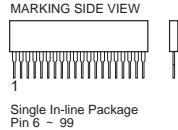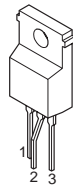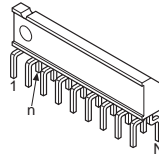
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TA8200AH

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T2

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TDA8172

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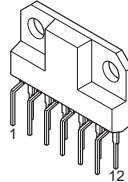
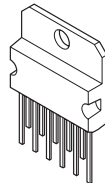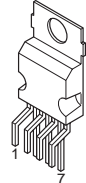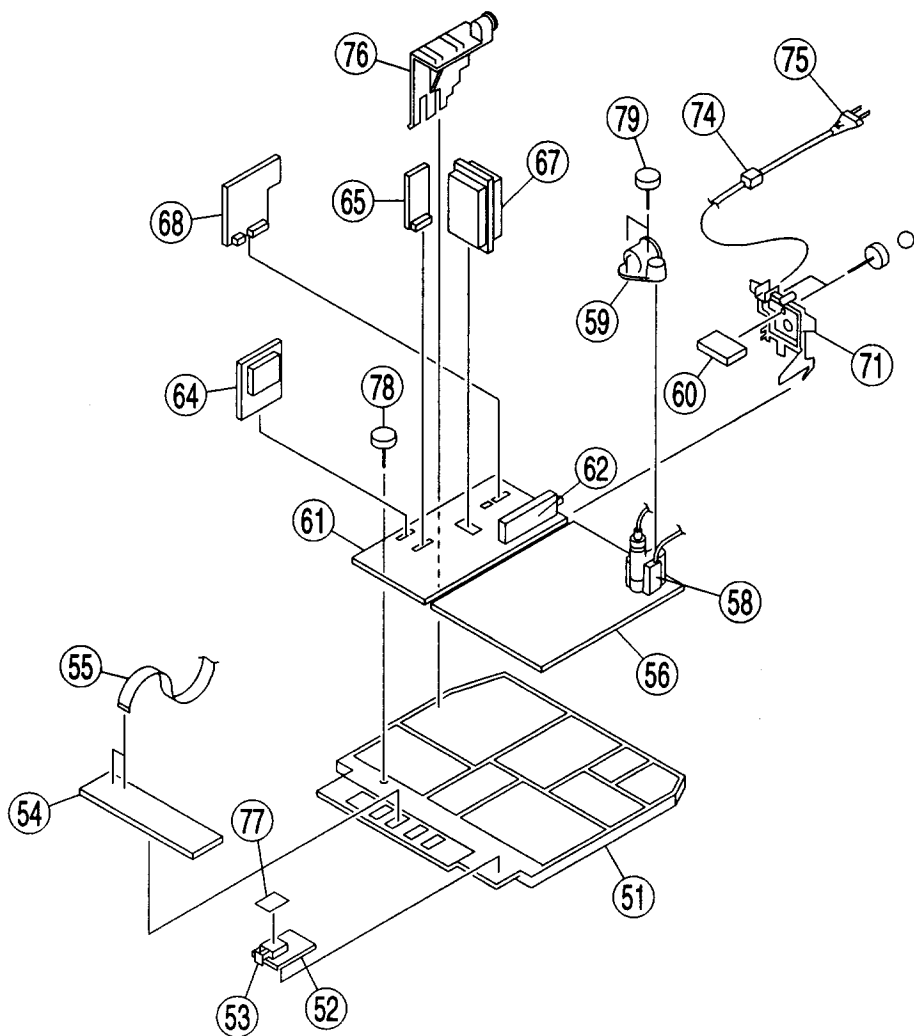## 7-2. CHASSIS

○ 7-685-648-79 +BVTP 3X12

7-3. 3D SPEAKER (KV-J25MH2(HK)/MN21(GE))

○ 7-685-648-79   +BVTP 3X12
● 7-685-663-71   +BVTP 4X16